RCRA CLOSURE PLAN
THERMAL TREATMENT UNITS
AEROJET CORPORATION
ORANGE COUNTY, VIRGINIA

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and February 26, 2013

Submitted To:

Virginia Department of Environmental Quality
629 East Main Street
Richmond, VA 23240

Prepared By:

Aerojet Corporation
7499 Pine Stake Road
Culpeper, VA 22701
EPA ID# VAD981112618

In Conjunction With:

Environmental Alliance, Inc.
5341 Limestone Road
Wilmington, DE 19808

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ENVIRONMENTAL ALLIANCE

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1.0 INTRODUCTION

This description of the Closure Plan, post-closure plan, and financial requirements has been prepared in accordance with Title 40 of the Code of Federal Regulations (CFR), Part 264, Subparts G (Closure and Post-Closure) and H (Financial Requirements). The Closure Plan presented herein describes how Aerojet Corporation (Aerojet) will close the four regulated thermal treatment units (TTUs) of the thermal treatment facility (TTF) at the Aerojet Orange County facility (Facility) located at 7499 Pine Stake Road in the town of Rhoadesville, Virginia (mailing address is 7499 Pine Stake Road, Culpeper, VA 22701). In addition, this Closure Plan includes the financial requirements associated with closure activities for the TTF.

References in this Closure Plan to Federal Hazardous Waste Regulations (e.g., Title 40 of the CFR, Part 264) are to regulations adopted by reference in the Virginia Hazardous Waste Management Regulations (VHWMR), Waste Regulations – Chapter 60 (9 Virginia Administrative Code (VAC) 20-60).

1.1 Purpose

The purpose of this Closure Plan (CP or Plan) is to describe the steps necessary to achieve clean closure of the TTUs. The TTUs will have achieved clean closure when all hazardous waste or hazardous waste constituents of concern (HCOCs) have been removed from the TTUs to levels such that direct contact with any parts of the TTUs or any HCOCs that remain after closure will not pose an appreciable threat to human health or the environment, nor adversely impact any environmental media in excess of established exposure levels.

Achievement of clean closure will be demonstrated by the systematic removal of hazardous waste and/or HCOCs, by decontamination of the equipment, structures, and soils, and by comparison of the HCOCs in the sample compliance data to one of four decontamination criteria in this CP. The four decontamination criteria that comprise the closure performance standard are non-detection of analytes, background levels, treatment standards for hazardous debris (40 CFR

268.45), and risk-based criteria. Since clean closure is the goal of this CP, a post-closure plan is not necessary at this time. If Aerojet is unable to attain clean closure for the TTUs, then an amended Closure Plan will be submitted to the Virginia Department of Environmental Quality (VDEQ) for approval along with a post-closure plan.

As described in Section 3.0 of this CP, the TTF consists of four (4) TTUs, designated TTU-1, TTU-2, TTU-3, and TTU-4. Note that at the time of submission of this Closure Plan, Aerojet is in the process of applying for a hazardous waste storage permit with the intent of closing the TTF following issuance of the storage permit and construction of the RCRA permitted storage facility buildings. This CP identifies steps necessary to complete final closure of the TTF. When the TTF (i.e., all four TTUs combined) is no longer needed, final closure will be implemented in accordance with this Closure Plan.

Aerojet will notify the VDEQ of their intent to close the permitted TTUs at least 60 days prior to initiation of closure activities. A Certification of Closure will be submitted to the VDEQ within 60 days of completion of closure. This certification, stating that the TTUs have been closed in accordance with the requirements of the approved CP, will be made by both Aerojet and an independent Professional Engineer registered in the state of Virginia. Until the Certification of Closure has been accepted/approved by the VDEQ, Aerojet will maintain an onsite copy of the approved CP and all approved Closure Plan revisions.

1.2 Closure Performance Standard

This CP has been designed to ensure that the TTUs at Aerojet Orange County will not require further maintenance or controls after closure. Closure of the TTUs will be in such a manner that it:

- Minimizes the need for further maintenance.
- Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents,

leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or the atmosphere.

- Complies with the closure requirements of 40 CFR Part 264, including, but not limited to, the requirements of 40 CFR 264.178, 264.197, 264.228, 264.258, 264.280, 264.310, 264.351, 264.601 through 264.603, and 264.1102.

Aerojet will attempt clean closure to meet the closure performance standard by removing all hazardous waste and hazardous waste constituents to one of four decontamination standards in this CP. The four decontamination standards that comprise the closure performance standard are non-detection of analytes, background, treatment standards for hazardous debris (40 CFR 268.45), and risk-based. The removal of all hazardous waste and hazardous waste residues, prior to and during closure, will eliminate the potential for post-closure release of hazardous waste, hazardous waste constituents, or residues, leachate, contaminated run-off from rainfall, or hazardous decomposition products to the ground, surface waters, or atmosphere.

At any time, should it become apparent that removal of all residuals or attainment of the closure performance standard levels in one or more of the TTUs is technically or economically infeasible, Aerojet will amend this Closure Plan and submit both the amended closure plan and post-closure plan to the VDEQ for approval. Refer to Section 15 for further details.

1.3 Partial Closure and Final Closure Activities

The closure activities described in this section apply to any individual TTU within the TTF. The same methodology for closure will apply to each unit; therefore, this CP can be implemented on a single unit of the TTF or all TTUs simultaneously. Note that closure of all TTUs are planned following issuance of the RCRA storage permit and construction of the permitted storage facility buildings.

Partial or final closure activities consist of removal of the final hazardous energetic waste inventory for onsite thermal treatment, offsite disposal of thermal treatment residue and thermal treatment burn pan lining material at a permitted treatment, storage, and disposal facility (TSDF), decontamination and disposal of the TTU structures including burn pans and covers, collecting soil and groundwater samples demonstrating attainment of the closure performance standards, potential removal of impacted soil, and certification of closure. As noted above, at this time, Aerojet does not anticipate that partial closure will occur.

1.3.1 Description of Equipment Replacement

Certain structures within the TTUs, such as the burn cages and containment pans, may be replaced as normal wear on these components necessitates their replacement. When inspection shows that replacement of the equipment is necessary, proper decontamination will be performed prior to disposition of the failed equipment in accordance with the applicable closure procedures of this Closure Plan.

1.4 Closure Plan Organization

This CP conforms to the general format specified in the VDEQ Draft Guidance Manual for Closure Plans and Post-Closure Plans for Hazardous Waste Management Facilities (September 28, 2001), and consists of the following sections, with referenced tables and figures presented at the end of the report (After Section 15 and before the Attachments):

- Section 1 Introduction
- Section 2 General Facility Description
- Section 3 Thermal Treatment Facility Description
- Section 4 HCOCs and Analytical Test Methods
- Section 5 Clean Closure Decontamination Standards
- Section 6 Final Closure Procedures
- Section 7 Soil Closure
- Section 8 Groundwater Closure
- Section 9 Closure Cost Estimate

- Section 10 Financial Assurance
- Section 11 Liability Requirements
- Section 12 Closure Schedule
- Section 13 Closure Plan Amendment
- Section 14 Certification of Closure
- Section 15 Post-Closure

2.0 GENERAL FACILITY DESCRIPTION

The Facility is located in Rhoadesville in Orange County, Virginia. The approximately 2,400-acre Facility is generally rectangular in shape with access roads and buildings and magazines located throughout the property. The Facility is characterized by small hills and valleys, and the majority of the Facility is wooded or undeveloped. Prior to the initial purchase of the property in 1986 by the Atlantic Research Corporation (ARC), the area was primarily unimproved fields, woods and farmland. The Facility boundary including a 1,000 foot buffer zone and 1-mile radius is shown on Figure 1, USGS Topographic Map. There are no established industrial operations immediately bordering the Facility. A few residential properties border the Facility, primarily to the north and south, with undeveloped wooded areas to the east and west.

The United States Environmental Protection Agency (EPA) granted the former ARC facility a Resource Conservation and Recovery Act (RCRA) Research, Development and Demonstration (RD&D) permit (EPA ID Number VAD981112618) on January 30, 1987. The RCRA RD&D permit governs the onsite destruction of energetic (propellant) waste by open burning at a thermal treatment facility. Thermal treatment events commenced in September of 1990. Aerojet acquired the Facility from ARC in October 2003 and has continued operating to date under the EPA RD&D permit.

ARC, a longstanding supplier of solid propulsion systems for the defense contract market, operated the Orange County, Virginia location from 1990 to 2003 as a solid rocket propellant production facility, as well as a rocket motor manufacturing and testing facility (SIC Code 3764). Aerojet purchased certain assets of the ARC Propulsion Division in October 2003. Under the terms of the purchase agreement, Aerojet acquired the Orange County Facility and continued existing plant operations. Aerojet develops and manufactures solid propellant rocket motors and gas generators for tactical missiles, and supplies attitude control motors and spin, retro, and post boost propulsion systems for strategic missiles. In addition to rocket motor production and testing, plant operations include administration, storage of explosive materials, laboratory research, and design and development of propulsion systems (SIC Code 3764).

Energetic waste is generated from both research and development (R&D) and manufacturing/production operations through a variety of processes. R&D operations are very similar to full-scale production, but on a much smaller scale. R&D operations are likely to also involve more and different propellants and compositions from those in production; however, many of the ingredients are the same or similar. Propellant manufacturing includes the following major processes: (1) ingredient preparation, e.g., drying, grinding, sizing; (2) propellant mixing (of ingredients); (3) propellant casting (into cases or sleeves); (4) curing of propellant (often involves heating); and (5) propellant finishing, involving cutback/trimming/sawing of cast propellant. After finishing, the final process step is rocket motor assembly, and it does not ordinarily generate energetic waste.

The production processes described above, with the exception of curing and assembly, typically involve generation of some form of energetic wastes. In addition to those processes, other sources of energetic wastes include test quantities of propellants from the various mixes that are used for quality assurance (QA) testing and then scrapped, scrapped samples or grains, or even an occasional mix that is scrapped after failing QA testing.

Aerojet operates a RCRA thermal treatment facility onsite for destruction of energetic waste (energetic/reactive and energetic/reactive-solvent wastes permitted under the RD&D permit) by open burning. Non-energetic hazardous waste residue generated at the TTF is shipped offsite for further management.

2.1 Facility Contact Information

Environmental and Safety Manager
Aerojet Corporation
7499 Pine Stake Road
Culpeper, VA 22701
Phone: (540) 854-2000

3.0 THERMAL TREATMENT FACILITY DESCRIPTION

3.1 Location and Background

The TTF is located in the central-eastern portion of the Facility as shown on Figure 1. It has operated since 1990 for treating energetic waste materials. Photographs of the TTF area are included as Attachment A to this Closure Plan.

Energetic wastes are generated in rocket propellant manufacturing and R&D operations. Thermal destruction of energetic wastes by Aerojet in the TTUs is accomplished by ignition and open burning, not by open detonation. Open detonation is not currently used and has never been used by Aerojet for destruction of energetic wastes. Although some energetic waste materials are detonable if initiated by severe shock, they burn or deflagrate at a predictable rate when initiated properly, otherwise they would not be useful as rocket propellants. The method of ignition of energetic wastes at Aerojet is similar to the ignition of a rocket motor. An electrically fired pyrotechnic device ignites a bag of pyrotechnic powder producing heat and hot particles which then ignites the energetic waste in a manner to burn predictably.

Four thermal treatment units (TTU-1, TTU-2, TTU-3, and TTU-4) exist in which open burning (OB) of energetic waste in containment pans and/or burn cages was conducted under the RD&D permit. The TTUs are located in a cleared area in the central-eastern section of the Facility. The purpose of the RD&D permit was twofold: (1) to develop and demonstrate an effective containment pan design for thermal treatment of waste solid rocket propellant and (2) to assess environmental impacts and performance of open burning operations at a "new" (began operations in 1990) facility with established pre-existing (baseline) environmental conditions. The containment pan and burn cage designs have been tested and proven at the Facility under the RD&D permit and the designs have been used at former ARC and other Aerojet facilities.

To date, open burning of energetic waste has occurred routinely within TTU-1, TTU-2, and TTU4; TTU-3 was only used historically on occasion to open burn scrap solid rocket propellant grains within containment drums. The RD&D permit was written such that only three of the four TTUs could be used during a burn event, so one TTU (TTU-3) was used historically for open burning only on a limited basis. On rare occasions during approximately the first five years of operational life of the TTF, TTU-3 was used only for open burning of off-specification propellant "grains" (solid propellant cast into rubber sleeves) in either 30- or 55-gallon metal drums containing water to facilitate recovery/reuse of the metal head-plate attached to the grain (note that the grains are non-propulsive). The grains were from one propellant program only (Arcadene 311G, with HMX the only explosive of the four propellant ingredients), and all residual material was collected from the metal drums within TTU-3 and appropriately managed prior to offsite disposal. TTU-3 has never had permanent waste treatment structures (i.e., active burn pans) located in the unit, and TTU-3 saw only very limited use for open burning and only for that specific application described above. As such, there was very limited exposure to HCOCs in TTU-3, unlike the other three TTUs, which were routinely used for open burning over the 20+ year operational life of the TTF. Therefore, the assessment of TTU-3 is less rigorous in this Closure Plan than that for TTU-1, TTU-2, and TTU-4.

3.1.1 General Dimensions and Structural Description

A paved road leads up to the TTF and to a gravel access road, which runs along the northeastern side of the TTF and provides entry to each of the TTUs. A 10-foot to 12-foot high berm of earth extends around the units on all sides, except at the entrance to each TTU. The dimensions of the TTF can be estimated on Figure 1.

Thermal Treatment Units – TTUs 1-4, which can be seen in Figure 1, are similar in construction. A 10 to 12-foot high berm of earth surrounds each unit and provides a barricade. The two end units are parallel to each other and the two middle units, which are parallel to each other, are perpendicular to the end units. The floors of the units consist of compacted earth and gravel and vary in size from approximately 144 feet long by 56 feet wide to 156 feet long by 50 feet wide.

Containment Pans - Each TTU may contain four to eight containment pans (burn pans), with twelve pans located at the TTF. The current configuration has four containment pans in TTU-1 and eight containment pans in TTU-2 (recently changed from four pans), with TTU-4 currently empty and not in use. As noted above, TTU-3 has never been used for open burning of energetic waste at the TTF and currently has only new sand and extra containment pans stored within the unit. The burn pans (historically located in TTUs 1, 2, and/or 4) are identically sized at 4 feet wide by 12 feet long with a rounded bottom 2 feet deep and are constructed of ½-inch mild steel plate. This pan type was selected due to the design not warping under the extreme heat of the burns, ease of loading, and the added volume for underlying liner material (e.g., sand) offered by the rounded bottom. Sand is used as the liner material to insulate the pans and prevent warping in the sidewalls. The sand is heavy enough to remain in place during the open burn events and provides an effective heat barrier. The pans rest on the ground surface within the TTUs.

When not in use, prior to loading of energetic waste, and following burns after the pans have cooled and been cleaned (occurs approximately 24 hours after an open burn event), each pan is covered to keep out any precipitation and eliminate water contact with burn residuals, and to keep any residuals within the pan. The containment pans are covered with two-piece aluminum overlapping covers with side handles that fit down over the sides of the pan. The pan covers are made of ⅛-inch thick 5052 grade aluminum. The covers are designed so that precipitation will run off and not accumulate on the cover or enter the containment pans.

Burn Cages - The burn cages are designed to process small squibs, igniters, and other configured small metal items that contain or are contaminated with propellant. The burn cages, made of ¼ -inch thick carbon steel, are constructed of a steel plate framework with vertical steel rods through the plating to form the enclosure. Each cage is approximately eight cubic feet in volume. The cage assembly rests in the containment pans when in use and there are currently two cage assemblies at the TTF.

3.2 Hazardous Waste Codes Managed at the TTF

Only energetic wastes that are characteristically hazardous due to reactivity as defined under 40 CFR 261.23(a)(6), including energetic waste that may contain trace amounts of regulated solvent from propellant testing, clean-up, or soak-out operations, are managed at the thermal treatment units. Energetic wastes containing RCRA characteristic heavy metals are not permitted to be treated onsite under the EPA RD&D permit and Aerojet standard operating procedures. For safety purposes, no specific chemical or physical tests are conducted on energetic wastes.

All energetic waste material carries EPA waste code D003 and is hazardous due to its characteristic of reactivity, being "...capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement." Propellant-contaminated trash (e.g., cardboard containers, gloves, rags) is routinely generated and also handled as D003 reactive waste.

Some of the waste propellant and propellant-contaminated trash that is treated at the TTF may contain trace amounts of regulated solvent. The primary solvents used in propellant-related operations that will be found in energetic waste include methyl ethyl ketone, 1,1,1-trichloroethane, and tetrahydrofuran. Others that are used, but infrequently and in small quantities, currently include pyridine, dioctyl adipate, methylene chloride, isopropyl alcohol, and 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113). In addition to EPA waste code D003 for energetic waste listed above, waste codes D022, D035, D038, F002, and/or F005 may be applied to energetic waste (or propellant-contaminated trash) containing trace amounts of solvent.

Energetic waste treated at the TTF may have included any propellant formulation manufactured or otherwise used at the Aerojet Orange County Facility (including testing of propellants from other Aerojet facilities resulting in energetic wastes to be disposed of), including related energetic raw materials, as well as energetic wastes containing solvents used in testing, clean-up, and soak-out operations. A table providing the compositions of both production and R&D propellants, including a general listing of ingredients for R&D propellants, is included as Attachment B. Note that energetic wastes from propellant containing RCRA characteristically hazardous metals have always been shipped offsite for treatment/disposal because conditions in the EPA-issued RCRA RD&D permit and standard operating procedures for the Facility did not allow for open burning onsite.

3.3 Maximum Waste Inventory

The maximum waste inventory of energetic waste material that was treated during the active life of the TTF or that could require thermal treatment at the time closure is initiated is 7,000 pounds, the maximum permitted amount under the existing Facility RD&D permit.

3.4 Control of Run-on/Precipitation During Closure

The earthen berms that surround each thermal treatment unit provide an effective barrier against surrounding storm water run-on by their physical presence and have been graded so that they are stable, as well as able to withstand normal rain percolation. The floors of the TTU areas are relatively flat, with each TTU gently sloped toward its entryway. Storm water percolates in these areas except under severe weather conditions, when storm water sheet flow may occur toward the TTU entryways. Storm water conduits at each entryway collect the water and divert it along the downward grade to a storm water management pond adjacent to the thermal treatment units. Aerojet obtained the data for a 24-hour storm event for Orange County from Appendix 4B of the *Virginia Stormwater Management Handbook First Edition 1999*. The 24-hour rainfall depths by year are reported as follows:

Year	1	2	5	10	25	50	100
Depth (in.)	3.2	3.5	4.7	5.5	6.5	7.5	8.0

Review of the topographic map of the Facility indicates that the TTF is located at an elevation of approximately 440 feet above mean sea level. An area of lower elevation is located west of the thermal treatment units, suggesting that stormwater would flow west. Therefore, the depth of rain from a 24 Hour, 25-Year Storm event (see table above), combined with the fact that the

TTUs are located in an area of higher elevation from which the stormwater would drain, would not produce enough rain to cause run-on during closure activities over the approximately ten-foot-high earthen berms surrounding the TTUs.

Aerojet also researched the Flood Insurance Rate Map (FIRM) produced by FEMA. The FIRM indicates that the Facility, including the TTUs, is located in a Zone X Area. FEMA defines a Zone X Area as outside the 0.2% annual chance floodplain. The FIRM shows that the TTUs are located approximately one mile away from the closest 100-year flood area, as also depicted on Figure 1. Thus, this also demonstrates that the TTUs are not subject to flooding by a 24 Hour, 25-Year Storm event.

4.0 HCOCS AND ANALYTICAL TEST METHODS

Based on the energetic waste compositions and waste codes that have been and are currently treated at the TTF, Aerojet, in recent correspondence and discussions with the VDEQ related to permitting activities for the TTF, has developed a list of HCOCs for different media, presented in Tables 1 – 3 for soil, groundwater, and wash/rinse water, respectively, which will be analyzed via applicable EPA SW-846 test methods to demonstrate attainment of the closure performance standard. Tables 1 and 2 contain the constituents' SW-846 methods of analysis, method detection limits (MDLs), and practical quantitation limits (PQLs) for soil (solids) and groundwater (liquid) media, respectively. Analytical data obtained to demonstrate closure of soil and groundwater must be provided by a laboratory that is certified by the Virginia Environmental Laboratory Accreditation Program (VELAP).

4.1 HCOC Rationale

As a result of recent correspondence and discussions during conference calls between Aerojet and the VDEQ regarding permitting efforts concerning the TTF, it was agreed that both a soils and groundwater monitoring program that includes a number of key indicator constituents and parameters is the appropriate method for handling environmental sampling at the TTF. Aerojet and the VDEQ, upon reviewing the list of constituents in the propellant formulations contained in the table included as Attachment B of this Closure Plan, agreed to the rationale below and constituent lists contained on Tables 1 and 2 of this CP concerning environmental sampling in the vicinity of the TTF during its operational life and closure (with only closure applicable to this CP). The VDEQ indicated they were agreeable to setting up the list of HCOCs that would be sampled during closure to include key constituents present in Aerojet's waste. The following language presents Aerojet's rationale for using the list of constituents present on Tables 1 and 2 for the closure soil and groundwater monitoring programs.

A significant amount of the propellant work at Orange is related to very small-scale R&D efforts. The quantities of these R&D propellants and related energetic waste generation are very small compared to production propellants. R&D propellant constituents are constantly changing, and often only grams of materials are used and gram quantities of propellants are made for initial testing to determine hazard characterization and propellant characteristics. Some ingredients may never go beyond initial testing, and some may progress to only several pounds of propellant being made and tested. Quantities generated and frequency of generation only become significant if the propellant is determined to be suitable for production after limited scale up and development testing.

Currently and historically, there have been only three production programs at Orange, and these accounted for the majority of the propellant quantities and related waste generation. These three production programs are Arcadene 311 G, Arcite 386M, and Arcadene 458. Of these three production programs, Aerojet has only ever treated energetic waste from the Arcadene 311G program at the TTF. Energetic waste from the Arcite 386M and Arcadene 458 programs has always been shipped offsite for treatment and disposal because they contain RCRA characteristic metals. The EPA RD&D permit does not allow open burning of energetic wastes containing RCRA metals at the TTF, therefore these wastes have always been shipped offsite for treatment and disposal. As such, the vast majority of energetic waste treated in the TTF has come from the Arcadene 311G program.

The ingredients comprising the largest percentage of the composition of energetic waste generated from the Arcadene 311 G production program and R&D propellant activities are HMX, ammonium perchlorate, and aluminum powder. Propellants from production or development programs at other Aerojet facilities that are sent to the Orange Facility for limited-scale analytical/quality testing or engineering evaluation, have similar propellant formulations to the Orange production programs, including the primary ingredients ammonium perchlorate, HMX/RDX, and aluminum powder. Other energetic waste generated from R&D efforts at the Orange Facility, while highly variable in composition, is likely to include either ammonium perchlorate, HMX, or RDX as a primary ingredient. Some of the energetic waste from R&D operations also contains small amounts of metals, including RCRA metals (e.g., chromium, lead). However, those wastes have always been shipped offsite for treatment/disposal. Refer to the table included in Attachment B for composition of production and R&D propellants (lists of ingredients and percent composition).

Aerojet has developed Tables 1 and 2 to include HCOCs consistent with the information presented above. HCOC parameters will include the primary ingredients (largest percent by weight) in the main production program (Arcadene 311G) and of the various R&D propellants (perchlorate, HMX, and aluminum). Perchlorate is one of the most common ingredients in R&D propellant formulations (and therefore in the energetic waste streams) to be treated at the TTF. Perchlorate is the anion of ammonium perchlorate (AP) and does not biologically or chemically degrade readily under natural environmental conditions. Perchlorate has also been noted as a constituent of potential concern at several other munitions facilities and has become a compound of high visibility and environmental concern over recent years. Therefore, perchlorate would serve as a good indicator compound and would provide a high likelihood of detection in both soil and groundwater of a potential release from the TTF. The RCRA (toxicity characteristic or TC) metals, although not historically or currently treated at the TTF under the EPA RD&D permit, are included in the HCOC parameter list due to their toxicity. Aerojet will include hexavalent chromium (along with total chromium) in analysis of soil and groundwater samples to facilitate future data analysis, including for risk assessment purposes if necessary. Trivalent chromium will be assumed to be the difference between total and hexavalent chromium. HCOC parameters also include energetic compounds, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) that are either potential constituents in certain energetic wastes or standard compounds that are analyzed for in the respected methods presented on Tables 1 and 2.

Aerojet has historically monitored soil and groundwater near the TTF under an environmental monitoring program conducted in accordance with the EPA RD&D permit. In addition to certain metals, VOCs and SVOCs have historically been monitored in groundwater and SVOCs have historically been monitored in soil under the RD&D monitoring program. These compounds have been included on the HCOC closure parameter lists for consistency with historical sampling, and VOCs have been included on the soils HCOC closure parameter list for uniformity with the groundwater monitoring HCOC closure parameter list. Historical analytical results for soil and groundwater media from 2006 – 2010 have been included in this Closure Plan for reference purposes and possible use in statistical comparisons of closure sample data. Historical soil sampling data from 2006 – 2010 is contained in Attachment C. Historical groundwater sampling data from 2006 – 2010 is contained in Attachment D. Aerojet has also include baseline data for soil and groundwater, collected in 1989-1990 prior to open burning operations at the TTF, in Attachments E and F respectively.

Dioxins and furans were included as HCOCs at the request of the VDEQ and will be sampled at select locations in soil during closure; however, they will not originally be sampled in groundwater during closure. Aerojet will sample for these constituents in groundwater only if they are detected in soil at concentrations exceeding the closure performance standard. Since these substances have high K_{oc} values and low water solubility, if they are detected at all, they should be found in soil before they would be present in groundwater.

Aerojet believes that based on the Facility operating and monitoring history, the list of HCOC parameters provided in Tables 1 and 2 provides for a comprehensive evaluation of the soil and groundwater conditions to assess the potential effects of operations at the TTF. The constituents listed on Tables 1 and 2 are sufficient to detect a release from the units and include some of the more toxic constituents that may be present in energetic waste (or as potential combustion byproducts) and that could pose a more adverse threat to human health or the environment. The constituent lists presented in revised Tables 1 and 2 provide consistency and transparency between the soil monitoring and groundwater monitoring programs at closure, as well as consistency with historical media monitoring at the Orange Facility.

4.2 Analytical Program - Soils

Initial soil samples will be analyzed for the constituents specified in Table 1 by appropriate methods from SW-846, Third Edition, 1986, as indicated. Note that dioxins and furans will only be analyzed in select soil samples initially. Refer to Section 7.0 for the soil sampling procedures.

4.3 Analytical Program - Groundwater

All initial groundwater samples will be analyzed for the constituents specified in Table 2 by appropriate methods from SW-846, Third Edition, 1986, as indicated. Note that based on historical groundwater results and discussions with the VDEQ, Aerojet will sample for both total and dissolved metals during closure. For evaluation against closure performance criteria including risk assessment purposes, Aerojet will initially use only the reported "total" metals concentrations. The constituent list provided on Table 2 concerning groundwater sampling is identical to the constituent list provided on Table 1 concerning soil sampling, with the exception of dioxins and furans. As stated in Section 4.2 above, dioxins and furans will initially only be analyzed in select soil samples. If the results of the soil analysis for dioxin and furans indicate that dioxin and/or furans have the potential to reach groundwater, Aerojet will consider analysis of dioxin and/or furans in groundwater in the future as part of the closure process. Refer to Section 8.0 for the groundwater sampling procedures.

4.4 Analytical Program –Equipment Rinse Samples

As agreed upon through discussions between Aerojet and the VDEQ, the numerical criteria for determining whether the equipment/structures (i.e., burn pans, covers, and cages) used in the TTUs have been clean closed are risk-based decontamination standards. All rinse water samples from equipment/structures will be analyzed for the constituents specified in Table 3 by appropriate methods from SW-846, Third Edition, 1986, as indicated. Refer to Step 4 in Section 6.3 for the rinse water sampling procedures.

4.5 Analytical Program – Waste Management

All wastes that are generated from activities associated with closure of the TTUs (including structures), must be managed as residues or media that are potentially contaminated with hazardous waste. The hazardous waste codes applicable to the processes occurring at the TTF are defined in Section 3.2 above. In most cases of waste characterization, the criteria for determining whether a waste that is generated from closure activities at the TTF is hazardous is to determine if it exhibits a characteristic of a hazardous waste as defined in 40 CFR Part 261 Subpart C. The constituent list and regulatory limits of 40 CFR 261.24 are applicable for waste analysis in these instances. In addition, select volatile organic constituents (VOCs) that are the basis for the some of the F-Listed waste codes (that are not potential toxicity characteristic compounds) will also be analyzed to determine if applicable treatment standards are met prior to disposal.

All wastes streams generated during closure of the TTF will be characterized by analyzing for pH, metals, VOCs, SVOCs, and energetic compounds that may exhibit a characteristic of hazardous waste; and select other VOCs. This constituent list is appropriate for determining the proper method of disposal of these waste (i.e., as a hazardous or non-hazardous material). The constituent list and regulatory criteria for waste characterization are contained on Table 4. All waste characterization samples will be analyzed for the constituents specified in Table 4 by appropriate methods from SW-846, Third Edition, 1986, as indicated. Refer to Steps 1, 2, and 3 in Section 6.3 for types of waste sampling activities.

The EPA "contained in" policy applies to characteristic hazardous waste and listed hazardous waste contained in environmental media, which includes groundwater, surface water, soils, and environmental debris (as defined in 40 CFR 268.2(g)). The "contained in" policy is not applicable to rain water or rinseate. For waste characterization purposes, underlying listed waste constituents in the environmental media waste streams (i.e., soil, groundwater, sediment, and environmental debris, as defined in 40 CFR 268.2(g)) should meet risk-based levels in the absence of TCLP standards in order to demonstrate that the listed hazardous waste is no longer "contained in" the waste. Therefore, the regulatory criteria for applying the "contained in" policy to solid environmental media and debris is also listed on Table 4. Where the "contained in" policy applies in Aerojet's Closure Plan is for soils (that may require excavation due to exceeding clean closure decontamination standards).

5.0 CLEAN CLOSURE DECONTAMINATION STANDARDS

In accordance with the 40 CFR Part 264, Subpart G, Aerojet will close the TTUs in compliance with 264.111, Closure Performance Standards. This section discusses the general closure performance standards specified in Section 1.2 of this Closure Plan. The closure performance standards are the primary basis for closure of the TTUs. In order to demonstrate compliance with the closure performance standards, Aerojet has established clean closure decontamination standards for the TTUs. A TTU (or the entire TTF) will have attained clean closure when all hazardous waste or hazardous waste constituents have been removed from the TTU to levels such that direct contact with any parts of the TTU or any HCOCs that remain after closure will not pose a threat to human health and/or the environment, nor adversely impact any environmental media in excess of the VDEQ established exposure levels.

5.1 Soil

The clean closure decontamination standards applicable to soil are analytical non-detect, background, and risk-based standards as described below.

5.1.1 Analytical Non-Detects

Aerojet has consulted potential contract laboratories in populating the numerical values presented in the columns of Table 1 corresponding to the constituents' MDLs and PQLs. Ideally, these limits (MDLs and PQLs) should be well below applicable regulatory and risk-based screening levels (e.g., VDEQ and/or EPA screening levels, action levels, or clean-up levels determined through a risk assessment), but Aerojet cannot necessarily control the values that are ultimately reported by the laboratory. While the laboratory methods have published detection limits and quantitation limits, the laboratory is not always able to achieve these limits in practice for various reasons, including matrix interferences and the presence of naturally occurring inorganic substances (especially in soil samples).

During recent conference calls between Aerojet and the VDEQ regarding the permitting activities for the TTF (e.g., on October 28, 2010), the VDEQ agreed that there are factors (e.g., matrix interferences) beyond Aerojet's control that can raise the laboratory reporting limit. The VDEQ stated that as long as there is appropriate QA/QC documentation that the analysis was performed correctly by the laboratory, such an occurrence would not be considered evidence of a detection above an applicable regulatory or screening level. Aerojet will make every reasonable effort to ensure that the laboratory reporting limits are below corresponding regulatory and risk-based levels to assist in evaluating non-detect results. In some instances, however, risk-based screening levels are established that are below available laboratory method detection limits. Aerojet will contact laboratories selected for the analysis of closure samples to stress the importance of achieving the desired MDLs and PQLs prior to collecting closure samples.

Concentrations of HCOCs in compliance samples that are reported as "non-detect", with detection limits below corresponding risk-based (e.g., EPA Regional Screening Level (RSL) Summary Table) and/or regulatory screening levels, will be considered to have attained the closure performance standard for clean closure and will not be evaluated any further. The appropriate "non-detect" screening levels for soil are:

- EPA RSL Table Resident Soil Screening Value (with screening levels based on individual non-carcinogenic hazard index adjusted to 0.1 from 1)
- EPA RSL Table Protection of Groundwater SSLs (the SSLs contained in the EPA table are based on a dilution factor of 1 for initial conservative screening)

Aerojet may screen "non-detect" results separately when evaluating a direct contact pathway and a soil-to-groundwater pathway.

Concentrations of HCOCs in compliance samples that are reported as "non-detect", with detection limits above corresponding risk-based and/or regulatory screening levels, will be retained for further evaluation. If background samples were collected for a particular compound that meets this criterion, Aerojet will first compare compliance sample data to background data as described in Section 5.1.2. "Non-detect" HCOC concentrations below the background HCOC concentration would achieve the closure performance standard and be dropped from further consideration. If "non-detect" sample results are reported at detection limits above corresponding risk-based and/or regulatory screening levels, and are statistically above background concentrations, Aerojet will consult VDEQ and regulatory guidance for evaluating "non-detect" data in risk-assessments, including but not limited to *EPA Region III Technical Guidance – Chemical Concentration Data Near the Detection Limit, by Dr. Roy L. Smith, EPA, 1991* (http://www.epa.gov/reg3hwmd/risk/human/info/guide3.htm). Compounds that are not detected in the compliance samples and that were not managed at the hazardous waste management units will be considered not to be present, and Aerojet will propose that these compounds not be retained for risk assessment. Aerojet will initially evaluate "non-detect" results retained for the risk assessment at values representing ½ the corresponding MDL.

5.1.2 Comparison to Background

Aerojet will compare the concentration of naturally occurring HCOCs in compliance samples taken from within the TTUs to concentrations reported in background samples. HCOC concentrations in compliance samples that are below or not statistically different from the background sample levels, determined using appropriate statistical methods and performance standards, will be considered to have attained the closure performance standard for clean closure.

For consideration in calculating and comparing background concentrations, Aerojet has included historically-collected data from soil samples collected in the area of land surrounding the TTF in Attachments C (2006 – 2010 data) and E (baseline data from 1989 – 1990).

Aerojet recognizes that soil conditions can change over time due to natural processes and anthropogenic sources. As described in Section 7.2.5, Aerojet will conduct additional background sampling for naturally occurring HCOCs during closure at approximately fifteen soil sampling locations in an area(s) of the Facility that has/have not been affected by historical thermal treatment operations.

5.1.2.1 Statistical Evaluation

Aerojet will use the document *"Data Analysis Guidelines for Soil – Hazardous Waste Closure Sites, May 2001, DRAFT"*, contained as Attachment G to this CP, as guidance for conducting statistical analyses on sample results when comparing compliance sample data to background.

For detected HCOC results for naturally occurring compounds, the primary means of demonstrating that clean closure has been achieved will be by first demonstrating that no statistically significant difference (increase) between closure soil samples and background concentrations exists. Each depth interval in each TTU will be treated independently for statistical evaluation purposes. A statistical procedure for comparison of the data sets will be used to determine significance (see Attachment G for statistical procedures). In many cases, the background concentration would be determined as the upper tolerance limit or upper prediction limit of the background data set, and compliance sample results would be compared to this value. The statistical test that will be utilized may also depend upon the distribution of the data sets (e.g. CABF T-test for normal/log-normal distribution or appropriate non-parametric test). If the background comparison indicates a statistically significant increase in compliance data versus background data, constituent concentrations found to exceed background levels will be further assessed as discussed in Section 5.1.3 below.

5.1.3 Risk Assessment

An assessment of the risk presented by the HCOC(s) that do not meet the "analytical non-detect" or "background" closure performance standards will be performed. Each depth interval in each TTU will be treated independently for risk assessment purposes. Exposure point concentrations for each constituent will be calculated for each depth interval in each TTU and defined as the 95% upper confidence limit (UCL) of the soil samples collected from the depth interval (e.g. the 95% UCL for lead, calculated from the samples taken from TTU-1 surface interval). In instances where a constituent is retained for risk assessment with only "non-detect" sample results, the sample set exposure point concentration would typically be defined as ½ of the 95%

UCL of the mean of the detection limits or ½ of the highest detection limit. Procedures for risk assessment are outlined in the VDEQ Risk Assessment Guidance *"Risk-Based Closure"*, included as Attachment H to this CP. The risk goals/performance standards of Attachment H are an individual carcinogenic risk of 1E-06 and a cumulative carcinogenic risk of 1E-04 and a cumulative hazard index of one for non-carcinogens (for constituents affecting the same target organ).

Numerical site-specific risk-based closure performance standards for soil, if applicable, will be developed at the time of closure consistent with the calculation methods presented in Attachment H. Calculated, site-specific, risk-based HCOC concentrations will represent soil cleanup levels for demonstrating risk-based clean closure. Note that closure of soil and groundwater will occur separately and under different timeframes; therefore, Aerojet will not be assessing the cumulative risk associated with potential contact with both impacted soil and groundwater. Aerojet has 180 days to clean close soil and will submit a certification of closure of soil within 60 days following this 180-day period. Aerojet will conduct quarterly groundwater sampling for one year and will submit a certification of closure of groundwater within 60 days following this one-year period. Because Aerojet will be closing the soils and groundwater in and around the TTF on differing schedules, Aerojet will evaluate soil and groundwater sampling results on differing schedules and the risk-based performance criteria (i.e., a cumulative carcinogenic risk of 1E-04 and a cumulative hazard index of one) will apply separately to each of the two media.

Note: Aerojet may start the closure-related sampling of groundwater monitoring wells prior to formal initiation of closure activities upon authorization by VDEQ (to include formal approval of the Closure Plan) as part of the effort to demonstrate closure of groundwater.

5.2 Groundwater

The clean closure decontamination standards applicable to groundwater are analytical non-detect, background, and risk-based standards as described below. The evaluation of groundwater data will occur following the completion of four quarters of monitoring.

5.2.1 Analytical Non-Detects

Aerojet has consulted potential contract laboratories in populating the numerical values presented in the columns of Table 2 corresponding to the constituents' MDLs and PQLs. Ideally, these limits (MDLs and PQLs) should be well below applicable regulatory and risk-based screening levels (e.g., EPA screening levels, action levels, federal drinking water maximum contaminant levels (MCLs) or clean-up levels determined through a risk assessment), but Aerojet cannot necessarily control the values that are ultimately reported by the laboratory. While the laboratory methods have published detection limits and quantitation limits, the laboratory is not always able to achieve these limits in practice for various reasons, including matrix interferences and the presence of naturally occurring inorganic substances.

During recent conference calls between Aerojet and the VDEQ regarding the permitting activities for the TTF (e.g., on October 28, 2010), the VDEQ agreed that there are factors (e.g., matrix interferences) beyond Aerojet's control that can raise the laboratory reporting limit. The VDEQ stated that as long as there is appropriate QA/QC documentation that the analysis was performed correctly by the laboratory, such an occurrence would not be considered evidence of a detection above an applicable regulatory or screening level. Aerojet will make every reasonable effort to ensure that the laboratory reporting limits are below corresponding regulatory and risk-based levels to assist in evaluating non-detect results. In some instances, however, risk-based screening levels are established that are below available laboratory method detection limits. Aerojet will contact laboratories selected for the analysis of closure samples to stress the importance of achieving the desired MDLs and PQLs prior to collecting closure samples.

Concentrations of HCOCs in compliance samples that are reported as "non-detect", with detection limits below corresponding risk-based (e.g., EPA Regional Screening Level (RSL) Summary Table) and/or regulatory screening levels (e.g., MCLs in the case of groundwater), will be considered to have attained the closure performance standard for clean closure and will not be evaluated any further. The appropriate "non-detect" screening levels for groundwater are:

- EPA RSL Table MCL Value (federal drinking water standard)
- EPA RSL Table Tapwater Screening Value, with screening levels based on individual non-carcinogenic hazard index adjusted to 0.1 from 1.

Concentrations of HCOCs in compliance samples that are reported as "non-detect", with detection limits above corresponding risk-based and/or regulatory screening levels, will be retained for further evaluation. If background samples were collected for a particular compound that meets this criterion, Aerojet will first compare compliance sample data to background data as described in Section 5.2.2. "Non-detect" HCOC concentrations below the background HCOC concentration would achieve the closure performance standard and be dropped from further consideration. If "non-detect" sample results are reported at detection limits above corresponding risk-based and/or regulatory screening levels, and are statistically above background concentrations, Aerojet will consult VDEQ and regulatory guidance for evaluating "non-detect" data in risk-assessments, including but not limited to *EPA Region III Technical Guidance – Chemical Concentration Data Near the Detection Limit, by Dr. Roy L. Smith, EPA, 1991* (http://www.epa.gov/reg3hwmd/risk/human/info/guide3.htm). Compounds that are not detected in the compliance samples and that were not managed at the hazardous waste management units will be considered not to be present, and Aerojet will propose that these compounds not be retained for risk assessment. Aerojet will initially evaluate "non-detect" results retained for the risk assessment at values representing ½ the corresponding MDL.

5.2.2 Comparison to Background

Aerojet will compare the concentration of naturally occurring HCOCs in compliance monitoring wells to concentrations reported in samples obtained from the background monitoring wells. Refer to Section 8.3 for information regarding the monitoring well network surrounding the TTF. HCOC concentrations in compliance samples that are below or not statistically different from the background sample levels, determined using appropriate statistical methods and performance standards, will be considered to have attained the closure performance standard for clean closure.

For consideration in calculating and comparing background concentrations, Aerojet has included historically-collected data from groundwater samples collected from the TTF monitoring well network in Attachments D (2006 – 2010 data) and F (baseline data from 1989 – 1990). Monitoring well cluster MW-2 has historically represented background (upgradient) groundwater quality in the TTF area. Aerojet will continue to use the MW-2 well cluster as representing background in the closure process. Refer to Section 8.3 for further discussion on the monitoring well network.

5.2.2.1 <u>Statistical Evaluation</u>

Aerojet will use statistical methods consistent with those specified in the document *"Data Analysis Guidelines for Soil – Hazardous Waste Closure Sites, May 2001, DRAFT"*, contained as Attachment G to this CP, for conducting statistical analysis on sample results when comparing compliance sample data to background. In many cases, the background concentration would be determined as the upper tolerance limit or upper prediction limit of the background data set, and compliance sample results would be compared to this value. Aerojet will also consult the document *"Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009 (EPA 530/R-09-007)"* when conducting statistical analysis on groundwater data.

5.2.3 Risk Assessment

An assessment of the risk presented by the HCOCs that do not meet the "analytical non-detect" or "background" closure performance standards will be performed. Even though Aerojet is sampling for both "total" and "dissolved" metals (as discussed in Section 4.3), for the initial risk assessment, "total" metals concentrations in groundwater will be used (with the exception of speciated chromium values for trivalent and hexavalent chromium as discussed in Section 4.1 above). Exposure point concentrations for each constituent will be calculated as the 95% upper confidence limit (UCL) of the groundwater samples collected from all wells. In instances where a constituent is retained for risk assessment with only "non-detect" sample results, the sample set exposure point concentration would typically be defined as ½ of the 95% UCL of the mean of the detection limits or ½ of the highest detection limit. Procedures for risk assessment are outlined in the VDEQ Risk Assessment Guidance *"Risk-Based Closure"*, included as Attachment H to this CP. The risk goals/performance standards of Attachment H are an individual carcinogenic risk of 1E-06 and a cumulative carcinogenic risk of 1E-04 and a cumulative hazard index of one for non-carcinogens (for constituents affecting the same target organ).

Numerical site-specific risk-based closure performance standards for groundwater, if applicable, will be developed at the time of closure consistent with the calculation methods presented in Attachment H. Calculated, site-specific, risk-based HCOC concentrations will represent groundwater cleanup levels for demonstrating risk-based clean closure. Based on the results of quantitative risk assessment, the MCLs will be considered in determining if clean closure has been achieved and/or choosing remediation options, if applicable. Note that closure of soil and groundwater will occur separately and under different timeframes; therefore, Aerojet will not be assessing the cumulative risk associated with potential contact with both impacted soil and groundwater. Aerojet has 180 days to clean-close soil and will submit a certification of closure of soil within 60 days following this 180-day period. Aerojet will conduct quarterly groundwater sampling for one year and will submit a certification of closure of groundwater within 60 days following this one-year period. Because Aerojet will be closing the soils and groundwater in and around the TTF on differing schedules, Aerojet will evaluate soil and groundwater sampling results on differing schedules and the risk-based performance criteria (i.e., a cumulative carcinogenic risk of 1E-04 and a cumulative hazard index of one) will apply separately to each of the two media.

5.3 Equipment/Structure Rinse Water

The clean closure decontamination standards applicable to rinse water are analytical non-detect, background, risk-based, and treatment standards for hazardous debris. Decontamination criteria for demonstrating clean closure of equipment and structures include the following decontamination standards:

- Non-detection of analytes less than the method detection limit
- Background concentration in raw tap water
- Concentrations in sample blanks if detected
- Risk-based concentrations which entails concentrations that are at or below applicable regulatory criteria.

5.3.1 Analytical Non-Detects

Aerojet has consulted potential contract laboratories concerning the MDLs and PQLs for constituents listed on Table 3. These limits would be identical to those limits shown on Table 2, which lists the groundwater monitoring constituents. Ideally, these limits (MDLs and PQLs) should be well below applicable regulatory levels that will be used to compare the data to, but Aerojet cannot necessarily control the values that are ultimately reported by the laboratory. While the laboratory methods have published detection limits and quantitation limits, the laboratory is not always able to achieve these limits in practice for various reasons, including matrix interferences and the presence of naturally occurring inorganic substances.

During recent conference calls between Aerojet and the VDEQ regarding the permit activities for the TTF (e.g., on October 28, 2010), the VDEQ agreed that there are factors (e.g., matrix interferences) beyond Aerojet's control that can raise the laboratory reporting limit. The VDEQ stated that as long as there is appropriate QA/QC documentation that the analysis was performed correctly by the laboratory, such an occurrence would not be considered evidence of a detection above an applicable regulatory level. Aerojet will make every reasonable effort to ensure that the laboratory reporting limits are below the applicable regulatory levels that will constitute the closure performance standard. In some instances, however, risk-based screening levels are established that are below available laboratory method detection limits. Aerojet will contact laboratories selected for the analysis of closure samples to stress the importance of achieving the desired MDLs and PQLs prior to collecting closure samples.

Concentrations of HCOCs in rinse samples that are reported as "non-detect", with detection limits below corresponding regulatory levels listed in Table 3, will be considered to have attained the closure performance standard for clean closure and the equipment/structures from which the rinse samples were taken will be considered non-hazardous waste.

Concentrations of HCOCs in rinse samples that are reported as "non-detect", with detection limits above corresponding regulatory levels listed in Table 3, will either be 1) sampled again for only those constituents to obtain results with MDLs below the regulatory levels listed in Table 3; 2) decontaminated again and sampled again for only those constituents to obtain results below the regulatory levels listed in Table 3; or 3) properly managed and disposed as hazardous waste.

5.3.2 Comparison to Background

If an HCOC in the rinse water sample is above the detection limit, the clean closure decontamination standard will still be met if the HCOC concentration is less than or equal to that of the corresponding HCOC's concentration in the raw water, equipment blank, field blank, or trip blank (as applicable) associated with the rinse water sampling event(s).

5.3.3 Risk-Based Regulatory Levels

In the case of rinse samples from equipment and structures (i.e., burn pans, covers, and cages), the rinse water is being used to demonstrate that the equipment used in the thermal treatment units has been decontaminated to meet the clean closure performance standards. Numerical clean closure performance criteria for decontamination rinse samples collected from equipment/structures are shown on Table 3. Concentrations of constituents detected in rinse water samples that are at or below respective decontamination standards achieve the clean closure performance standard. Decontamination criteria for demonstrating clean closure of equipment and structures include the following risk-based decontamination standards:

- Federal MCLs if available
- EPA Tapwater Risk-Based Concentrations (RBCs)

MCLs (http://www.epa.gov/reg3hwmd/risk/human/), if available, shall be utilized as the decontamination standards for compounds listed on Table 3. If MCLs are not available, the corresponding Tapwater RBCs from the Regional Screening Level (RSL) Summary Table (http://www.epa.gov/reg3hwmd/risk/human/) shall be utilized as the decontamination standards. MCL and Tapwater RBC values should be reviewed at the time of closure for recent changes, which may cause some of the values listed on Table 3 to change (i.e., values at the time of closure would supersede the values currently listed on Table 3).

5.4 Treatment Standards for Hazardous Debris

The Alternate Treatment Standards for Hazardous Debris contained in 40 CFR 268.45 may be used in lieu of the "analytical non-detect", "background", or "risk-based" treatment standards as appropriate.

40 CFR 268 defines "Debris" as:

> *"(g) Debris means solid material exceeding a 60 mm particle size that is intended for disposal and that is: A manufactured object; or plant or animal matter; or natural geologic material. However, the following materials are not debris: any material for which a specific treatment standard is provided in Subpart D, Part 268, namely lead acid batteries, cadmium batteries, and radioactive lead solids; process residuals such as smelter slag and residues from the treatment of waste, wastewater, sludges, or air emission residues; and intact containers of hazardous waste that are not ruptured and that retain at least 75% of their original volume. A mixture of debris that has not been treated to the standards provided by §268.45 and other material is subject to regulation*

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> *as debris if the mixture is comprised primarily of debris, by volume, based on visual inspection."*

40 CFR § 268 defines "Hazardous Debris" as:

> *"(h) Hazardous debris means debris that contains a hazardous waste listed in subpart D of part 261 of this chapter, or that exhibits a characteristic of hazardous waste identified in subpart C of part 261 of this chapter. Any deliberate mixing of prohibited hazardous waste with debris that changes its treatment classification (i.e., from waste to hazardous debris) is not allowed under the dilution prohibition in §268.3."*

The regulation of 40 CFR 268.45, Treatment Standards for Hazardous Debris, will be evaluated if warranted for demonstrating closure of equipment and structures that meet the definition of "debris" (e.g., burn pans, pan covers, and burn cages).

Hazardous debris being closed in accordance with 40 CFR 268.45 using one of the specified physical extraction methods (e.g., high pressure steam and water sprays) or chemical extraction methods (e.g., water washing and spraying) must provide treatment to a clean debris surface, which is defined in Footnote #3 to Table 1 in that subpart (40 CFR 268.45).

Hazardous debris treated by one of the extraction or destruction technologies specified in Table 1 of 40 CFR 268.45 that does not exhibit a characteristic of hazardous waste (40 CFR 261 Subpart C) after treatment is not considered a hazardous waste and is not required to be managed as a hazardous waste.

Where the Treatment Standards for Hazardous Debris are used to demonstrate clean closure, the Closure Report will specify the alternate treatment technology used (technology from Table 1 of 40 CFR 268.45) and include a detailed description of the decontamination activities associated with utilizing that technology. For example, where high pressure steam and water sprays are used, the Closure Report shall specify the equipment utilized, cleaning procedures, and the temperature, pressure, residence time, agitation, surfactants, and detergents used to remove hazardous contaminants from debris surfaces or to remove contaminated debris surface layers.

For each piece of equipment or structure treated to this standard, the number of individual washes and rinses need to be documented along with the time required to complete each step included in the cleaning procedure. In addition, the amount of washwater water collected (gallons) needs to be documented. Solid and liquid waste generated during the alternate treatment method for debris will be characterized and disposed of according to the same procedures for decontamination water and solids identified in Section 6.3 Step 3 of this Closure Plan.

An independent registered professional engineer (P.E.) licensed in the state of Virginia will inspect debris treated to this closure performance standard after treatment, and the results of the inspection(s) will be recorded and included in the final Closure Report. The inspection will note the physical condition of the debris and the details of the final cleaned surfaces (i.e., that the debris surface meets the definition in Footnote #3 to Table 1 in 40 CFR 268.45).

A VDEQ representative must be present to inspect any items classified as hazardous debris after treatment by any of the technologies of Table 1 of the 40 CFR 268.45 to ensure compliance with the applicable performance and/or design and operating standard. A commonly observed example of this would be treatment of a metal surface by high-pressure steam and water sprays (Item A.1.e. of Table 1 of the 40 CFR 268.45) to a "clean debris surface". A clean debris surface is defined in Footnote 3 of Table 1 of the 40 CFR 268.45 as follows, "... *means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area.*" In this instance, the VDEQ representative would need to be present to visually inspect the surface to ensure that the performance standard was met.

The alternative treatment standards for hazardous debris will be considered acceptable to the VDEQ only upon the inclusion of an additional certification statement by an independent registered P.E. licensed in the state of Virginia that the closure has been completed in accordance with the above criteria, and the purpose and intent of the alternative treatment standard specified in 40 CFR 268.45., and that the debris, after treatment, does not exhibit a characteristic of hazardous waste identified under 40 CFR 261 Subpart C.

5.5 Alternative to Decontamination and Waste Sampling

Aerojet also has the option not to sample a waste (i.e., residual ash, sand lining material, burn pans, pan covers, burn cages, decontamination water, or other closure-generated waste), and may make that determination prior to and/or at any time during the closure process as an alternative to (further) decontamination procedures for a particular waste. Aerojet would then elect to manage that waste as hazardous waste prior to transporting off-site for disposal at a permitted hazardous waste facility.

6.0 FINAL CLOSURE PROCEDURES

At the time of submission of this Closure Plan, Aerojet is in the process of applying for a RCRA hazardous waste storage permit with the intent of closing the TTF following issuance of the storage permit and construction of the RCRA permitted storage facility buildings. This section identifies steps necessary to complete final closure of the TTF. Although partial closure of an individual TTU within the permitted TTF is not expected to be necessary, this CP is applicable to closure of a single TTU or all four TTUs simultaneously. When any portion of the TTF (i.e., an individual TTU or all four TTUs combined) is no longer needed or operations at the Facility cease, partial or final closure of equipment, structures, and soils will be implemented in accordance with the procedures in this section.

6.1 Final Treatment of Propellant Wastes

Within 90 days following receipt of the final volume of energetic waste, the hazardous waste inventory will be processed by thermal treatment and treatment residues will be containerized and removed from the units, and then subsequently characterized, and properly disposed offsite at a permitted disposal facility. Aerojet will notify the VDEQ a minimum of 60 days prior to commencing closure activities.

6.2 Site Preparation

The following site preparation activities are necessary as part of the closure process; however, they may be completed prior to the commencement of the actual closure period.

6.2.1 Decontamination Areas

Temporary Decontamination Areas

Aerojet will construct temporary decontamination areas for small and large equipment to support closure activities. All equipment will be washed in containers or in decontamination areas. All equipment decontamination areas will be constructed of sufficient materials and thickness, and contain sufficient number of layers to create an impervious surface which allows for the collection of all washwater, rinseate, and residues in containers or tanks. The potential location of the temporary large equipment decontamination area is presented on Figure 2. Prior to decommissioning TTU structures and soil sampling activities, temporary decontamination areas will be constructed for the following:

Small Equipment – The small equipment decontamination area(s) will be used for decontaminating sampling equipment, personal protection equipment, and any small tools or equipment used for the soil and groundwater investigations. The small equipment decontamination area(s) will effectively contain all washwater and residues generated during the decontamination process by using an impervious liner/berm system or equivalent. Aerojet may use small equipment decontamination areas in different locations to support TTU closure activities. For example, during soil sampling within a TTU, it may be convenient to have a small equipment decontamination area set up inside the TTU to facilitate efficient sample collection. Small equipment decontamination areas (e.g., a decontamination area constructed of double layer of 8-mil polyethylene sheeting wrapped over a 4x4 wood frame) will be easily constructed and dismantled and only required for short periods of time.

Large Equipment – Decontamination of large TTU structures such as burn pans, covers, and cages is intended to occur in the large equipment decontamination area. The large equipment decontamination area will have dimensions of sufficient size to contain the entire size of the largest TTU structure being decontaminated (i.e., 12-foot long containment pan). In addition, the constructed liner will have sufficient thickness and layers to be able to sustain stresses caused by moving heavy equipment in and out of the decontamination area. The decontamination area will be graded with at least a 2% slope toward one corner of the area. The decontamination area will be lined with a 40-mil high-density polyethylene (HDPE) liner of sufficient gauge thickness to prevent the loss of the washwater, rinseate, and residues from the temporary decontamination containment area. An impervious earthen berm (or equivalent) will be constructed around the edges of the decontamination area. The berm will effectively contain all washwater and residues generated during the decontamination process. The decontamination area will drain into a low corner area where all washwater and residues will be removed by pumping, bailing, shoveling, etc., to appropriate containers for storage, sampling and testing, and disposal in accordance with 40 CFR Part 261 and 40 CFR Part 268.

All decontamination areas will be covered while not in use, with the covers designed to eliminate contact of precipitation with the impermeable liners of the decontamination areas. Any precipitation that contacts the impermeable liners of the decontamination areas will be collected within 24 hours and managed in the same manner as decontamination water (described in Step 3 of Section 6.3 below). Water that collects on top of the decontamination area covers may be pumped off (or equivalent) to the surrounding surface and allowed to infiltrate/run-off.

6.2.2 Staging Area

Aerojet will notify the VDEQ at least 15 days prior to establishing a new waste accumulation (temporary storage) area. A temporary storage area will be used to stage the decontaminated burn pans, covers, and cages. The temporary waste accumulation area may also be used to stage the residual contents of the burn pans (e.g., sand liner material or ash residues) and/or decontamination water and solids while awaiting laboratory analysis or to stage materials generated in the potential soil excavation process. Please refer to Figure 2 for the potential location of the temporary storage area. Liquid waste stored in the temporary storage area will be stored in a manner that meets secondary containment requirements and has sufficient capacity to contain ten percent of the total volume of waste stored or the volume of the single largest container, whichever is greater.

6.3 Procedures for Removal or Decontamination of Hazardous Waste Residue, Contaminated Equipment and Structures, and Soils

Once the final volume of energetic waste has been treated, clean up and decontamination of the TTU(s) will proceed according to the following steps.

STEP 1: Remove accumulated metal bands (leftover from fiber drums), fiber drum remnants and ash residues from the containment pans and burn cages. Place accumulated ash and other residues in containers and transport to either the Building 24 non-energetic waste accumulation area per standard Aerojet procedures or the temporary staging area shown on Figure 2. A discrete grab sample will be collected from each container and analyzed for the constituents listed on Table 4 by appropriate SW-846 methods, with results compared to the regulatory criteria contained on the table. Hazardous waste ash material will be disposed of in accordance with 40 CFR Part 268, Land Disposal Restrictions. Manage all residues considered to be hazardous waste by virtue of being "derived from" hazardous wastes [i.e., ash/residue from treatment/containment pan(s) in which solvent contaminated energetic waste is open burned] as hazardous waste as specified in 40 CFR Part 261, §261.3 (c)(2)(i).

STEP 2: Remove the burn pan liner material (sand) from the containment pans and burn cages. The burn pan liner material, because of its large volume, will be transferred to lined and covered roll-off containers positioned between the burn pans and the entrance to each TTU. Liner material from burn pans in which solvent-contaminated waste was burned will be segregated from the other liner material in its own roll-off container or drums. Manage all sand liner material considered to be hazardous waste by virtue of being "derived from" hazardous wastes [i.e., sand liner material from treatment/containment pan(s) in which solvent contaminated energetic waste is open burned] as hazardous waste as specified in 40 CFR Part 261, §261.3 (c)(2)(i). A composite sample consisting of material from at least four locations within the container will be collected from the burn pan liner material in each roll-off container. The samples will be analyzed for the constituents listed on Table 4 by appropriate SW-846 methods, with results compared to the regulatory criteria contained on the table. Hazardous waste will be disposed of in accordance with 40 CFR Part 268, Land Disposal Restrictions.

STEP 3: After the sand liner has been removed, decontaminate pans and burn cages in the large equipment decontamination area. Decontaminate by two successive steam cleaning and/or high-pressure hot water washes and detergent/water scrubs. Any solids or liquids generated during decontamination procedures will be directed into the low corner of the decontamination area. Solids or liquids generated from decontamination of burn pans in which solvent contaminated energetic waste was burned will be segregated from the other decontamination waste material in its own containers. Manage all decontamination solids or liquids considered to be hazardous waste by virtue of being "derived from" hazardous wastes [decontamination waste material from treatment/containment pan(s) in which solvent contaminated energetic waste is open burned] as hazardous waste as specified in 40 CFR Part 261, §261.3 (c)(2)(i). Refer to additional language concerning the "derived from" rule in the paragraph below.

The language of this paragraph has been inserted based upon guidance obtained from the VDEQ during comments and responses generated concerning the language of this Closure Plan. The "derived from" rule as defined in 40 CFR § 261.3(c)(2)(i) states "Except as otherwise provided in paragraph (c)(2)(ii), (g) or (h) of this section, any solid waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash, emission control dust, or leachate (but not including precipitation run-off) is a hazardous waste." The "derived from" rule also addresses rinseate. In addition, and in accordance with the "derived from" rule, residues from treating debris (e.g., burn pans) contaminated with listed wastes remain hazardous wastes unless they are delisted via a site-specific listing petition. If the residues are not separated from treated debris, the debris remains a hazardous waste and may not be land disposed. EPA gives several examples of treatment residues in the *Hazardous Waste Consultant*, August/September 1997, Page 8.15, including: "biomass from biodegradation, incinerator ash, washwater and soil, waste or other nondebris materials that may adhere to the treated debris." Relief for rinseate from the "derived from" rule is obtained as follows: rinseate may be determined not to be a hazardous waste for disposal purposes if the concentrations of the hazardous constituents of concern that the listings for F002 and F005 are based on are all less than MCLs (or tapwater RBCs if MCLs are unavailable). The listed waste constituents potentially present in Aerojet's waste that form the basis for assigning waste code F002 are methylene chloride, 1,1,1-trichloroethane, and 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113).

The listed waste constituents that form the basis for assigning waste code F005 are toluene, methyl ethyl ketone, and pyridine. In addition, the rinseate would be required to not be a characteristic hazardous waste in order to be classified as nonhazardous (see Table 4 for characteristic waste regulatory criteria).

Decontamination liquid and solids will be collected, segregated, and stored in containers or a tank located at a temporary 90-day accumulation area (with secondary containment for liquid waste) established proximal to the TTUs, or in containers that will be stored at Aerojet's less-than-90-day (Building 24) waste accumulation area. For waste characterization purposes (i.e., hazardous or non-hazardous determination), decontamination water will be analyzed for the constituents shown on Table 4 according to the methods presented on the table, with results compared to the regulatory criteria contained on the table. (Note that speciation of chromium will not be required for waste characterization purposes.) Hazardous wastewater will be managed and disposed of in accordance with 40 CFR Part 261 and 40 CFR Part 268. Solids generated during the decontamination process will also be analyzed for the constituents listed on Table 4 by appropriate SW-846 methods, with results compared to the regulatory criteria contained on the table. Once waste disposal profiles have been created for the decontamination water and decontamination solids, subsequently generated water or solids will be disposed under those waste profiles and need not be analyzed unless the process generating the decontamination waste has changed.

STEP 4: Following decontamination procedures, each pan, cover, and burn cage will be sampled by pouring distilled and/or deionized water over chosen areas into clean, laboratory-supplied containers and analyzed for the HCOCs listed in Table 3 according to the analytical methods specified in the table. (Note that speciation of chromium is required for rinse sampling purposes.) Collect a field blank along with rinse samples for each day of sampling. Shipments of rinse samples should also be accompanied by a trip blank.

After rinse samples have been collected, items that have been decontaminated (e.g., burn pans, covers, and cages) and are awaiting laboratory results for disposal will be stored in a temporary staging area that will be established adjacent to the decontamination area, as described above in

Section 6.2.2. Decontaminated structures will be placed on top of a layer of minimum 8-mil polyethylene sheeting and covered with 8-mil polyethylene sheeting while in the temporary staging area awaiting laboratory analysis for disposal.

If the results of the laboratory analyses indicate that the constituent concentrations are less than their respective regulatory limits, then the burn pan, cover, or cage will be disposed of, recycled, or beneficially reused as non-hazardous material. If the results indicate any constituent concentration exceeds its respective regulatory limit, then the structure will be decontaminated a second time and re-sampled as previously described or disposed of as hazardous waste in accordance with state and federal regulations.

STEP 5: After all structures have been removed from a thermal treatment unit, prepare the TTU for soil sampling in accordance with Section 7.0 of this CP. Prior to disturbing any soils or other geological materials within the TTU, make provisions for removing accumulated water that interferes with closure activities from within each thermal treatment unit. If necessary, accumulated water that interferes with closure activities will be pumped into 55-gallon drums or into a storage tank that will be located at a temporary staging area. At a minimum, a portable pump (explosion proof) and a sufficient length of hose will be provided. Any water generated as a result of this operation will be sampled and disposed of using the same procedures as for decon water.

STEP 6: Conduct soil closure activities as discussed in Section 7.0 below. When all remaining HCOC concentrations meet the clean closure decontamination standards presented in Section 5.0, proceed to Steps 7 through 10.

If remedial action is required and impacted soils are excavated, at any time, if further excavation is deemed technically or economically infeasible and hazardous waste constituents will be left in place, Aerojet may choose to notify the VDEQ that clean closure cannot be demonstrated. The TTU(s) would then be closed as a landfill(s) in accordance with 40 CFR 264.310.

STEP 7: Decommission the temporary decontamination and accumulation areas after all TTU equipment, structure, and soil wastes have been shipped offsite in accordance with all applicable Virginia and federal laws and regulations.

While the impermeable liner is still in place at the large equipment decontamination area, conduct a thorough decontamination of the temporary HDPE liner using steam or high-pressure hot water and detergent. Collect and manage decontamination water in accordance with the procedures specified in Step 3 above. After cleaning the liner, collect a rinse water sample and analyze for HCOCs according to the procedures specified in Step 4 above. Repeat decontamination procedures until the concentration of all HCOCs are below the regulatory limits specified in the table or dispose of the liner as hazardous waste in accordance with 40 CFR Part 268. If the liner has been demonstrated to be clean (HCOC concentrations are below regulatory limits), roll up the liner and store for future use or dispose of as non-hazardous waste. After the liner has been removed, re-grade the bermed soil area to resemble the original land contours and seed as necessary to establish a viable vegetative cover.

STEP 8: Whenever clean closure is demonstrated at a TTU, Aerojet may choose to level the berms surrounding the TTU and return the land surface to resemble the natural surrounding contours. In such instance, Aerojet will rough-grade, seed, and mulch (straw) the surface to ensure a permanent vegetative cover is established. Conversely, Aerojet may leave the berms in place for future operational flexibility.

STEP 9: Remove security measures that are no longer required. Security measures include fences, signs, and/or gates specific to the TTU(s).

STEP 10: To meet the performance standards for clean closure of groundwater, please refer to Section 8.0 for closure of groundwater procedures.

Inspection will occur weekly at a minimum during closure operations by qualified personnel. Presented below is a list of closure activities that will be tracked. Weekly inspections will focus on the following:

- Performing activities exactly as described in this Closure Plan.
- The presence of accumulated water within each TTU.
- Integrity of the temporary decontamination areas.
- Integrity of storage tanks and/or containers and their temporary accumulation areas, if applicable.
- Documentation of the above conditions and other observations regarding closure activities in a bound notebook signed weekly by the individual conducting the inspection.

7.0 SOIL CLOSURE

This section presents the process for demonstrating that the soils of the TTU(s) have been decontaminated to the clean closure decontamination standards presented in Section 5.0 of this CP and clean closure has been achieved.

7.1 Historical Soil Sampling Results for TTF Area

Aerojet has conducted historical sampling of environmental media, including soil, as part of the Facility's RD&D permit. Prior to conducting thermal treatment events, in order to establish baseline conditions around the TTF, soil sampling plots were established at 100-foot intervals from 100 to 400 feet along lines radiating outward from the TTUs. A five-foot radius around a permanent identifying marker defines each sampling plot. A total of 72 plots within 400 feet of the TTF were established as soil sampling locations. In addition, four remote soil sampling locations were established at approximately 1,000 meters from the burn site at roughly 90-degree intervals.

Each of the 72 plots within 400 feet of the TTF have historically been sampled once per quarter. In addition, the four remote soil sampling locations have been sampled once per month. A figure showing the approximate locations of historical soil sampling sites is included in Attachment C with historical soil sampling results. Historical analytical results for soil media from 2006 – 2010 have been included in this Closure Plan in Attachment C. Aerojet has also included baseline soil data, collected in 1989-1990 prior to open burning operations at the TTF, in Attachment E. The data in these two attachments is included for reference purposes and for possible use in statistical comparisons of TTU closure sample data to background data.

7.2 Soil Assessment within the TTU(s)

This section describes a soil sampling program to be used to develop depth and lateral extent specifications for soil excavation and/or to provide data to support certification that the TTU(s) has been closed and that no hazardous constituents resulting from thermal treatment remain above background or risk-based levels.

7.2.1 TTU Sampling Locations and Depths

Soil assessment will initially be carried out for the floor of the treatment area immediately around where the burn pans were located (an approximately 20-foot by 40-foot area) in each of the three active thermal treatment units (TTU-1, TTU-2, and TTU-4). Note that TTU-3 has not been used routinely for open burning activities; TTU-3 saw only very limited use historically in the early years of operation, on rare occasion, and only for that specific application described in Section 3.1. An approximate 10-foot by 10-foot grid pattern will be established in this 20-foot by 40-foot area and samples will be collected at the corner of each 10-foot by 10-foot (approximate) square (totaling 15 node points). Approximate soil sample locations are shown on Figures 3 (TTU-1), 4 (TTU-2), and 5 (TTU-3 and TTU-4). Note that TTU-3 will not be sampled initially due to its limited historical use; limited sampling in TTU-3 will occur during delineation sampling as described in Section 7.2.7. Sampling locations may need to be adjusted slightly based on field observations.

Quality control samples will be obtained at the frequency specified in Attachment I, which contains the Quality Assurance Project Plan (QAPP) for the closure sampling.

7.2.2 Sample Collection and Handling Methods

Samples will be collected from borings advanced with a four-inch diameter hollow-stem auger, by direct push (e.g., Geoprobe) methods, or by manual methods (e.g., hand auger). A split spoon sampler (two-inch diameter), Geoprobe macro-core, or other appropriate device (e.g., hand auger) will be used to collect the samples. Samples will be procured at one-foot depth intervals (i.e., surface (0 – 6”), at the 12” interval (6 – 12”), and at the 24” interval (18 – 24”)) to a total depth of 24 inches (for a total a three samples at each of the 15 node points).

While advancing each boring, the soil will be inspected for overt evidence of contamination (e.g., staining), and the physical properties (color, texture, structure, entrained-treated residuals, etc.) will be observed. Soil type along with any irregularities will be described in field notes. Any cuttings generated during the boring process will be used to backfill the boreholes.

The sampling technician will don disposable sampling gloves prior to sample collection. Using dedicated or decontaminated sampling devices, discrete grab samples will be collected at each interval for laboratory analysis using laboratory-supplied containers and/or collection devices. No compositing of soil is permitted. Sample containers will be labeled with the following information:

- Project name and identification number
- Name or initials of sampler
- Sample identification number
- Date and time of sample collection
- Type of analysis requested

At the time of sample collection, the following information will be recorded in a field sampling log book:

- Project name and identification number
- Name or initials of sampler
- Sample identification number
- Date and time of sample collection
- Location where the sample was obtained
- Notes on soil type and any irregularities noted in the sample

- Note the locations where dioxin/furan analysis is requested
- Weather conditions at the time of sampling.

Store samples on ice or refrigerate as soon as possible. Complete the chain-of-custody (COC) record immediately following sample collection. Samples will be accompanied at all times by a COC record. Transport or ship the samples on ice (4° C) to the laboratory along with the COC record.

7.2.3 Initial Soil Sample Analyses

The initial soil sampling applies only to TTU-1, TTU-2, and TTU-4. TTU-3 has not been used routinely for open burning activities; TTU-3 saw only very limited use historically in the early years of operation on rare occasion and only for that specific application described in Section 3.1. Therefore the assessment of TTU-3 is less rigorous in this Closure Plan than that for TTU-1, TTU-2, and TTU-4. Refer to Section 7.2.7 for sampling procedures for TTU-3.

The initial soil samples (collected from TTU-1, TTU-2, and TTU-4) will be analyzed for all constituents specified on Table 1 by appropriate methods from SW-846, Third Edition, 1986, as indicated. Note that dioxins and furans will only be analyzed in <u>four</u> randomly selected sample locations collected from the surface interval (0 – 6") within each TTU. Sampling and analysis of the soil samples will follow all quality assurance and quality control (QA/QC) procedures outlined in Attachment I.

7.2.4 Sampling Equipment Decontamination

All reusable sampling equipment will be decontaminated prior to use in the field, between each boring, and upon completion of all sampling activities at the end of each day to prevent cross-contamination between sample intervals and locations. In a temporary small equipment decontamination area, which may be located within the TTU, the following decontamination procedures will be employed:

- Place a piece of clean, impermeable plastic on the ground and around a berm, creating a decontamination area.
- Scrape excess soil from equipment using work gloves and hand tools.
- Return excess soil to the sampling location from which it was derived.
- Fill two five-gallon buckets, one with a low phosphate detergent and tap water wash, the other with a tap water rinse. Each bucket will have a dedicated stiff scrub brush and/or bristle test tube brush. Place buckets on impermeable plastic cover within decontamination area (e.g., constructed of double layer of 8-mil polyethylene sheeting wrapped over a 4x4 wood frame).
- Scrub sampling equipment first in the soap wash and then in the tap water rinse using the dedicated brushes.
- Rinse equipment with 0.1 N nitric acid rinse using a spray bottle or equivalent method (when cross contamination from metals is a concern).
- Rinse equipment in a third five-gallon bucket with deionized and/or distilled water.
- Rinse equipment with isopropyl alcohol using a spray bottle or equivalent method (when cross contamination from VOCs or SVOCs is a concern).
- Rinse equipment in the third five-gallon bucket with deionized and/or distilled water.
- Any water draining from decontamination procedures will be collected within the bermed area and containerized for appropriate offsite disposal.
- Let equipment air dry on plastic.

7.2.4.1 Soil Sampling Waste Disposal

Investigation Derived Waste (IDW) will be managed in accordance with the VDEQ "Policy for the Handling of Investigation Derived Wastes (IDW)" (and Addendum) as well as appropriate EPA IDW policies (e.g., Management of Investigation-Derived Waste During Site Investigations, May 1990, EPA/540/G-91/009). Regardless of sampling method, all disposable sampling equipment (e.g., latex gloves, plastic sleeves or scoops, plastic bags, etc.) will be collected in plastic garbage bags and placed into 55-gallon drums. Each 55-gallon drum of disposable sampling equipment will initially be labeled as "Hazardous Waste" with the accumulation start date and description of the contents pending receipt of the laboratory analysis of the soil samples from which the waste was derived. Depending on the results of the initial soil sampling, additional analysis of the sampling waste material may be necessary for waste disposal purposes. The containerized sampling wastes will be characterized and disposed of in accordance with all applicable state and federal regulations including but not limited to 40 CFR Parts 261 and 268.

7.2.5 Background Area Sampling

A similar 10-foot by 10-foot grid will be established in a 20-foot by 40-foot area of the Facility believed to be unaffected by past waste management practices or Facility operations (i.e., not in an area that would be expected to have additional sources of HCOCs other than the naturally occurring concentrations). Background samples will be collected from this grid in the same manner as described above for initial soil sampling events within the TTUs. Alternatively, Aerojet may collect background samples from multiple areas of the Facility that are unaffected by past waste management practices (e.g., 5 sample locations in 3 distinct areas of the Facility). The VDEQ shall approve the locations for background soil sampling prior to sample collection. Samples will be collected from approximately fifteen locations, with grab samples collected from soil at two distinct depth intervals (surface (0 – 6”) and 12” interval (6 – 12”)), and analyzed for naturally occurring constituents (metals) according to the methods specified on Table 1 for use in statistical comparison with samples taken from the TTUs. Physical properties of the background soil samples will also be recorded in field notes to determine comparability with TTU soils.

7.2.6 Initial Soil Sampling Data Evaluation

Data collected during the initial soil sampling event within the TTUs will be compared to the clean closure decontamination standards specified in Section 5.0 of this CP.

If all initial soil sampling HCOC results from TTU-1, TTU-2, and TTU-4 meet the clean closure decontamination standards specified in Section 5.0 of this CP, clean closure will have been demonstrated for these three TTUs and no further sampling or remedial actions are required within these units. In this instance, since only very limited, historical open burning was conducted in TTU-3 (refer to discussion in Section 3.1), and with the initial sampling results demonstrating clean closure of TTU-1, TTU-2, and TTU-4, only HMX, isophorone, and perchlorate will be sampled for at locations within TTU-3 as described in Section 7.2.7 below.

7.2.6.1 Non-Detect of Analytes

Concentrations of HCOCs in compliance samples that are reported as "non-detect" will be managed as described in Section 5.1.1. If all HCOC concentrations within TTU-1, TTU-2, and TTU-4 meet the "analytical non-detect" performance standard described in Section 5.1.1, clean closure will have been demonstrated for these three TTUs and no further sampling or remedial actions are required within these units. In this instance, no additional sampling will be conducted within TTU-3 to demonstrate clean closure of the unit other than that described in Section 7.2.7 below.

7.2.6.2 Comparison to Background

For naturally occurring inorganic constituents, Aerojet will compare detected concentrations in closure samples collected from within each TTU to background data, including samples collected as described in Section 7.2.5 above and possibly including data reported from historical soil sampling, as contained in Attachments C and E to this CP. Refer to Section 5.1.2 for the methods of comparing HCOC concentrations in closure samples to background concentrations. HCOCs that are reported below or not statistically different than background concentrations will be considered to have attained the closure performance standard for clean closure.

If all HCOC concentrations within TTU-1, TTU-2, and TTU-4 meet the "analytical non-detect" performance standard described in Section 5.1.1 or are reported below or not statistically different than background concentrations, clean closure will have been demonstrated for these three TTUs and no further sampling or remedial actions are required within these units. In this instance, no additional sampling will be conducted within TTU-3 to demonstrate clean closure of the unit other than that described in Section 7.2.7 below.

7.2.6.3 Risk Assessment

For constituents that do not meet the "analytical non-detect" or "background" closure performance standard as determined through the methods described in Sections 7.2.6.1 and 7.2.6.2 above, Aerojet will follow the procedures contained in Section 5.1.3 of this CP. Aerojet will assess the risk associated with these HCOCs, and if necessary, Aerojet will develop numerical site-specific, risk-based clean closure decontamination standards at the time of closure in accordance with the methods specified in Section 5.1.3 of this CP.

If all HCOC exposure point concentrations (calculated as the 95% UCL of the data) within TTU-1, TTU-2, and TTU-4 meet the risk-based clean closure decontamination standards (in combination with HCOCs that meet the "analytical non-detect" or "background" closure performance standard), clean closure will have been demonstrated for these three TTUs and no further sampling or remedial actions are required within these units. In this instance, no additional sampling will be conducted within TTU-3 to demonstrate clean closure of the unit other than that described in Section 7.2.7 below.

If HCOC concentrations exceed the risk-based clean closure decontamination standards, Aerojet will collect delineation samples around locations where standard(s) are exceeded for only those constituents which exceed the risk-based standards. Delineation sampling, as described in Section 7.2.7 below, may occur multiple times to fully delineate the horizontal and vertical extent of soil containing HCOC(s) above the risk-based clean closure decontamination standard(s). Following completion of delineation activities, Aerojet will implement remedial action for soil as specified in Section 7.3 below.

7.2.6.4 Fate and Transport Analysis

Note that the soil cleanup criteria will have to meet the requirements for risk from direct contact (discussed above in Section 7.2.6.3) and cross-media transfer, which is discussed in this section.

7.2.6.4.1 Soil-to-Groundwater Pathway

This section includes a discussion of a fate and transport evaluation that will be conducted for the entire soil column as part of risk-based evaluation. Fate and transport modeling is necessary to demonstrate that the residual soil concentrations of contaminants of HCOCs will not result in contamination of other environmental media of concern, including the groundwater underneath the closure unit. The use of the SESOIL model, which is included in VDEQ-approved methodology (Risk Exposure and Analysis Modeling System (REAMS) guidance), is well established and should facilitate review and approval of the results. The SESOIL model evaluates likelihood for the transport of contaminants to other media and estimates the transfer load.

SESOIL Model Description

The SESOIL model is used in chemical exposure assessments. SESOIL is a seasonal compartment model that simulates long-term pollutant fate and migration in the unsaturated soil zone. It can be used to estimate the average concentrations in ground water. SESOIL describes the following components of a user-specified soil column that extends from the ground surface to the ground-water table:

1. Hydrologic cycle of the unsaturated soil zone.
2. Pollutant concentrations and masses in water, soil, and air phases.
3. Pollutant migration to ground water.

4. Pollutant volatilization at the ground surface.
5. Pollutant transport in washload due to surface runoff and erosion at the ground surface.

SESOIL estimates all of the above components on a monthly basis for up to 999 years of simulation time, and a continuous or one-time release scenario can be selected. However, for closure and corrective action, a 30-year timeframe and single release scenario are typically chosen.

The soil column may be composed of up to four layers, each layer having different soil properties that affect the pollutant fate. In addition, each soil layer may be subdivided into a maximum of 10 sublayers if such details of the site soils are available.

The following pollutant fate processes are accounted for: Volatilization, Adsorption, Cation Exchange, Biodegradation, Hydrolysis and Complexation. In the absence of site-specific information for the above processes, conservative values/defaults are chosen as modeling inputs. For example, if biodegradation-related input values are not available, degradation is assumed to be zero or negligible.

SESOIL, when used for organic compounds, can be run with or without consideration of biodegradation. It is sensitive to the input value for soil organic carbon when biodegradation is considered and is very sensitive to the depth to groundwater. The VDEQ prefers that the facility calibrate the SESOIL model using site-specific input parameters for any fate and transport mechanism. Facilities may use estimated default parameter in the absence of field data. In such cases, the model might simulate results that are inaccurate by orders of magnitude. These results should be interpreted with caution and additional site-specific information for model input is required. The SESOIL model includes several other fate and transport mechanisms such as photolysis, cation exchange, and complexation.

Soil Physical Property Inputs

Four representative soil samples circumscribing the thermal treatment facility at 90-degree intervals will be collected for analysis of the physical soil properties listed on Page 62 of the

VDEQ REAMS document. Specifically, site-specific soil data will include at a minimum bulk density and porosity.

Aerojet will initially use a dilution attenuation factor (DAF) equal to one as a conservative estimate. If site-specific DAFs are proposed, they will be developed using the methodology described in the EPA Soil Screening Guidance, dated 2002, and the associated technical background document as found at the following location:

http://www.epa.gov/superfund/health/conmedia/soil/index.htm.

Model Outputs and Evaluation

SESOIL creates an output file which contains monthly or annual results for hydrologic cycle components, pollutant mass distribution, and pollutant concentration distribution for each layer or sublayer. The output of SESOIL also provides a monthly or annual status of concentrations of contaminants reaching to groundwater. Typically the annual status is selected.

The groundwater concentrations predicted by SESOIL will be used as an input to a quantitative risk assessment for groundwater exposure to demonstrate that the resultant groundwater concentration will not pose harm to human health. The SESOIL predicted concentrations should be calibrated to field conditions (as available and applicable) prior to utilizing the results from the model.

Aerojet will discuss the results of the SESOIL modeling and subsequent groundwater exposure risk evaluation with VDEQ prior to selecting a course of action. If results of the soil-to-groundwater fate and transport evaluation show that residual soil concentrations may pose unacceptable risk to future groundwater users, Aerojet will review historical groundwater data and will complete the groundwater closure sampling and analysis specified in Section 8.0 of the Closure Plan. Aerojet will compare historical groundwater data results and the results obtained during groundwater closure sampling to the predicted SESOIL model groundwater concentrations and draw conclusions and recommendations based on this data comparison. Note that the groundwater closure procedures in Section 8.0 of the Closure Plan also include a risk assessment based on analytical results of actual groundwater samples that will be collected during closure.

7.2.7 TTU-3 and Delineation Soil Sampling Locations and Analyses

Concurrent with delineation sampling for the other TTUs, or during a separate sampling event if no delineation sampling is required in TTU-1, TTU-2, and TTU-4, Aerojet will sample locations in TTU-3 for the HCOCs HMX and isophorone, which were primary ingredients in the only propellant formulation involved in the limited historical open burning conducted within TTU-3 (Arcadene 311G), and also for perchlorate, which is a primary ingredient in a majority of other propellant formulations. Aerojet will review the laboratory data reported for the initial sampling of TTU-1, TTU-2, and TTU-4. If delineation sampling is conducted in TTU-1, TTU-2, and/or TTU-4, Aerojet will also sample locations within TTU-3 for the HCOCs that will be sampled for during delineation sampling of TTU-1, TTU-2, and/or TTU-4 as described below. Aerojet will seek the VDEQ's approval of the list of additional HCOCs, if any, that will be sampled for within TTU-3 during the closure process.

Following evaluation of the initial soil sample data collected within TTU-1, TTU-2, and/or TTU-4 as described in Section 7.2.6 above, Aerojet will perform constituent-specific delineation sampling within each of the TTUs, as necessary, to determine the horizontal and vertical extent of contaminated soils for any constituents specific to each TTU that exceed cleanup standards required for clean closure. Sample locations will follow a 10-foot by 10-foot grid pattern and extend laterally from sample locations found to exceed clean-up standards. Note that delineation sampling may extend into the berms surrounding the floor of each unit. Vertical delineation will continue in one-foot intervals until results are below the closure performance standards up to the depth of the water table. Delineation soil samples will be analyzed for the constituents that are reported at concentrations above the clean closure risk-based decontamination standards for each specific TTU (TTU-1, TTU-2, and TTU-4). Sampling and analysis of the soil samples will follow the procedures for initial soil sampling as specified above, including quality assurance and quality control (QA/QC) procedures outlined in Attachment I.

During delineation sampling, Aerojet will also sample inside TTU-3 for HMX, isophorone, and perchlorate as well as all of the constituents that were retained for delineation sampling within TTU-1, TTU-2, and TTU-4. Aerojet will obtain VDEQ approval of the pared-down list of HCOCs for sampling within TTU-3 prior to conducting the sampling event. Since only limited, specific open burning was conducted historically inside TTU-3 (refer to discussion in Section 3.1), and there is no footprint or location of historical treatment structures (i.e., burn pans), sampling locations are not able to be preferentially located in the immediate area around the former location of burn pans (as in the case of the other TTUs). As such, TTU-3 will be sampled at 15 locations spread across the entire floor of the unit, as depicted on Figure 5. Aerojet will collect samples at each location from the surface (0 – 6"), 12" (6 – 12"), and 24" (18 – 24") depth intervals (for a total a three samples at each of the 15 node points) and initially only analyze the surface soil interval within TTU-3, with the samples collected from the 12" and 24" depth intervals placed on hold pending results of the samples collected from the surface interval. Sampling and analysis of the soil samples will follow the procedures for initial soil sampling as specified above, including quality assurance and quality control (QA/QC) procedures outlined in Attachment I.

Delineation sampling may occur multiple times and may also occur following the sampling of TTU-3 to define the extent of soil volume that does not meet the clean closure decontamination standards. Delineation sampling results and the results from sampling TTU-3 will be evaluated in the same manner as specified in Section 7.2.6 above.

7.2.8 Excavation Plan

Implementation of the excavation plan will be based upon the soil sampling data results from within the TTUs, including the statistical comparison of the sample data to background samples and/or the evaluation of the sampling data by a risk-based assessment (see Section 5.0 of this Closure Plan). Soils which fail to meet the risk-based decontamination standards will be excavated to a depth where the soils and subsoils demonstrate compliance with the decontamination standards.

Contaminated soils will be excavated and disposed of in accordance with the excavation plan described in this section. Excavation and removal will continue until no hazardous constituents remain above background levels and/or non-detection of analyte levels and/or acceptable risk-based decontamination standards and the area is approved by VDEQ to be clean closed.

If remedial action is required and impacted soils are excavated, at any time, if further excavation is deemed technically or economically infeasible and hazardous waste constituents will be left in place, Aerojet may choose to notify the VDEQ that clean closure cannot be demonstrated. The TTU(s) would then be closed as a landfill(s) in accordance with 40 CFR 264.310.

7.2.8.1 Vertical Extent of Excavation

The vertical extent of contamination will be established based upon the results of the soil investigation described in Sections 7.2.1 through 7.2.7 above. The sampling depth intervals described in those sections will be used to determine the depth of excavation. Specifically, excavation will continue to the bottom depth of the first sample interval that shows compliance with the clean closure decontamination standards. That is, excavation of soils will be to the bottom of the first "clean" sample depth interval. This ensures removal of all soils that do not meet the clean closure standards.

If soil contains HCOCs above the decontamination standards specified in this closure plan, then soil excavation will be conducted down to a maximum depth of one of the following:

- The bottom of the first soil sampling interval depth where sampling analytical data indicates compliance with the decontamination standards (clean closure conditions).
- The local seasonal high water table.
- The local bedrock.

7.2.8.2 Horizontal Extent of Excavation

The horizontal extent of excavation will be based upon the results of the soil investigation described in Sections 7.2.1 through 7.2.7 above. The horizontal sampling intervals described in those sections will be used to determine the lateral extent of excavation. Specifically, excavation will continue horizontally to the first sample point that shows compliance with the decontamination standards at all vertical intervals. This ensures removal of all soils that do not meet the clean closure decontamination standards.

7.2.8.3 Storage, Treatment, and Disposal of the Excavated Soil

The excavated soils will have been characterized for HCOCs and waste disposal through sampling and analysis prior to excavation. The excavated soil will be managed for offsite transportation and disposal according to all applicable State and Federal law. Any excavated soil that is classified as a hazardous waste will be transported for offsite disposal in lined roll-off containers and/or lined dump trailers. Soils will be disposed of offsite in accordance with 40 CFR Part 268, Land Disposal Restrictions. It should be noted that the VDEQ "contained-in/contained-out" policy (guidance dated April 27, 2012), applicable to soil potentially contaminated with hazardous waste, applies to this Closure Plan for soils that do not meet the clean closure performance standard and are disposed offsite as waste. Refer to Table 4 for "contained-in" regulatory criteria.

7.2.8.4 Backfilling Areas of Excavation

Any areas of excavation will be backfilled with clean fill brought from offsite, or will be backfilled with soil from the berms of the TTU surrounding the excavation area. This area will then be seeded and a vegetative cover established to match the surrounding area.
In accordance with the *VDEQ Draft Guidance Manual for Closure Plans and Post-Closure Plans for Hazardous Waste Management Facilities (September 28, 2001)*, backfilling and

reclamation of the excavated area will not occur until the VDEQ performs a closure site inspection and Aerojet and the VDEQ agree that the area is clean closed and can be backfilled.

8.0 GROUNDWATER CLOSURE

At the request of the VDEQ, closure of the thermal treatment facility requires that groundwater be evaluated and protected. The following sections present a plan for the evaluation and closure of groundwater at the TTF in accordance with 40 CFR Part 264.112 and 40 CFR Part 264 Subpart F. This plan draws on historical Facility groundwater data and hydrogeologic investigations conducted under the RCRA RD&D permit.

This section of the CP is organized as follows:

- Section 8.1 presents the physical characterization of the area, including a description of the surface hydrology, geology, soils, and hydrogeology.
- Section 8.2 discusses historical groundwater monitoring at the TTF.
- Section 8.3 provides a description of the groundwater monitoring system for the TTF.
- Section 8.4 presents the groundwater closure monitoring program, including the sampling and analysis procedures and data evaluation methods.

After initiating closure activities, or earlier upon authorization by VDEQ (to include formal approval of the Closure Plan), the groundwater monitoring wells will be sampled quarterly for a period of one year to demonstrate closure of groundwater. During this year of sampling, the groundwater will be analyzed for the constituents that appear on Table 2, Groundwater Monitoring Parameters. Sampling data quality objectives and quality assurance protocols are generally consistent with those outlined in the QAPP presented in Attachment I. Groundwater sampling procedures are identified in Section 8.4.

8.1 Physical Characterization

This section describes the general and site-specific hydrology, geology, soils, and hydrogeology within the Facility. Much of the information presented in this section is derived from the Hydrogeological Investigation and Monitoring Well Network Report (Hydrogeological

Investigation) dated December 19, 1989 (included as Attachment J to this CP). The Hydrogeological Investigation was conducted to identify subsurface soil and groundwater conditions at the Aerojet Orange County Facility.

8.1.1 Surface Water Hydrology

Several streams and valleys characterize the surface water hydrology of the Facility. Drainage from the TTF is directed to a collection pond southwest of the thermal treatment facility. Discharge from the pond continues southwest of the TTF and enters an unnamed stream, where drainage continues to the north-northwest. The TTF is approximately 1,000 feet northeast of the unnamed stream and has an elevation of approximately 440 feet above mean sea level; the TTF is approximately 80 feet above the elevation of the unnamed stream. This unnamed stream exits the western property boundary and eventually enters Mountain Run, which is a stream located approximately 1.25 miles northwest of the TTF that is oriented from southwest to northeast and flows to the northeast. Several other onsite streams, some of which are intermittent, feed this onsite stream/creek. Another stream, Black Walnut Run, is located approximately one mile southeast of the TTF; it flows to the northeast and is roughly parallel to Mountain Run.

8.1.2 Geology and Soils

8.1.2.1 Shallow Bedrock

The shallow bedrock underlying the site was identified from borings conducted during the Hydrogeological Investigation (see Attachment J to this CP).

Hydrogeological Investigation

The Hydrogeological Investigation identified the shallow bedrock as green schist, slightly weathered, medium to moderately hard, and moderately fractured. The Geological Map of Virginia (1963) indicates that metamorphosed sedimentary rocks underlie the site. The geological formation containing these rocks was formerly referred to as the Wissahickon Schist and Wissahickon Granite. Research conducted during the Hydrogeological Investigation identified the Candler Formation of Late Precambrian to early Paleozoic age, reported to consist predominantly of quartz-chlorite-sericite phyllite and schist. The orientation of the Candler Formation follows the regional geologic trend of the area, striking 30 to 40 degrees to the northeast. The Candler Formation contains both foliations and steeply dipping joint sets.

Configuration of Bedrock Surface

Based on the results of the borehole and bedrock well drilling at the site, depth to bedrock and bedrock elevations above mean sea level (MSL) were recorded. These elevations have been plotted on Figure 7 of the Hydrogeological Investigation, which shows, based on shallow borings, the configuration and relief of the bedrock surface across the TTF area. Bedrock is highest in the east central area of the TTF and lowest in the western and southwestern portions. In borings that penetrated bedrock, the schist bedrock was observed to be moderately fractured, yet dry. Therefore, saturated bedrock was not encountered in the borings.

8.1.2.2 Soils

Characterization of the soil profile was accomplished by performing a literature review and by logging soils encountered during the well and test boring installations.

Literature Review

Existing literature was reviewed to aid in characterization of the soils at the Aerojet site. The Soil Survey of Orange County, Virginia (1971) identifies that the site is underlain by the Tatum-Nelson Association. These soils consist of a surface layer of mainly yellow brown silt loam. The subsurface soils are red to brown and yellow silty clay and silty clay loam. These soils are residual and derived from the in-place weathering of the Candler Formation.

Soil Logging

Logging of unsaturated soils encountered during test borings and well installations was performed to identify subsurface conditions. Soil boring logs are presented in Appendix A of the Hydrogeological Investigation. Four strata were identified, from highest to lowest: Stratum A (Alluvial), Stratum B (Residual), Stratum C (Disintegrated Bedrock) and Stratum D (Bedrock). Subsurface profiles of these strata are presented in Figures 5 and 6 of the Hydrogeological Investigation. At the request of DEQ, Aerojet has prepared an additional Geological Cross Section (designated C-C') from cluster wells MW-4A, 4B, and 4C through well MW-5 to cluster wells OW-1A and 1B. This additional profile is included at the beginning of Attachment J as Figure GW-1B. A Cross-Section Location Map (Figure GW-1A) is also included to show the location of this new profile relative to other profiles contained in Attachment J (Figures 5 and 6 of the Hydrogeological Investigation and Monitoring Well Network Report (Schnabel Engineering Associates, 1989).

Stratum A (Alluvial) consists of fine to medium sandy clay to elastic silt. This stratum is discontinuous; it is present in some locations from the surface down to approximately three feet.

Stratum B (Residual) consists of fine to medium sandy silt with sand, containing mica and rock fragments. Stratum B is present from the base of Stratum A (or from the surface where Stratum A is absent) to a depth of 33 to 58 feet.

Stratum C (Disintegrated Bedrock) consists of fine to coarse sandy silt with sand, containing rock fragments and quartz veins. Stratum C was reported from below Stratum B to the top of bedrock, a depth of 45 to 88 feet.

Stratum D (Bedrock) consists of slightly weathered, medium to moderately hard, moderately fractured, dry, green schist. Stratum D was reported from below Stratum C to the maximum depth investigated, 10 feet into bedrock.

Based on the results of the soil borings and shallow well drilling conducted at the site, unconsolidated zone thicknesses were recorded ranging from 45 to 85 feet. This thickness represents both saturated and unsaturated soils. An isopach map showing the total thickness of unconsolidated sediment is presented in Figure 8 of the Hydrogeological Investigation.

8.1.3 Hydrogeology

The uppermost water-bearing unit in the location of the TTF has been tentatively identified as unconsolidated sediments/weathered bedrock overlying the competent bedrock in this area. This identification is based on the results of the Hydrogeological Investigation conducted across the site.

8.1.3.1 Groundwater Flow, Direction, and Rate

The hydrogeological conditions at the site have been characterized during the soil boring and well instillation activities. The saturated and unsaturated unconsolidated soils and bedrock have been investigated. As mentioned in the previous section, the bedrock was characterized as moderately fractured, yet dry. Therefore, the monitoring wells were screened within the saturated thickness of the unconsolidated soils only. For the saturated soils, slug tests were conducted which included both rising and falling head test procedures to evaluate the hydraulic conductivity of the shallow aquifer.

Well Installation

During the Hydrogeological Investigation, monitoring wells were installed in clusters at several locations to fully characterize the aquifer within the unconsolidated soils. Individual wells within a cluster were screened at different depths than other wells in the same cluster in order to monitor representative depths within the shallow aquifer. A map showing the monitoring well locations is presented in Figure 6. Monitoring well construction logs are presented in Appendix B of the Hydrogeological Investigation.

Elevation Survey

Upon completion of the installation of the shallow wells, a professional surveyor located the wells on the Aerojet coordinate grid and measured the well elevations. The elevations of each of the wells are presented in Table 5. The elevations established can be used in conjunction with water level measurements to determine groundwater elevations at each well.

The locations of the wells were surveyed in relation to Aerojet's Facility grid system. The tops of casing elevations of the well were surveyed to an accuracy of 0.01 feet in relation to National Geodetic Vertical Datum (NGVD). The ground surface elevation adjacent to each monitoring well was also surveyed.

Water Level Gauging

Water level gauging was performed in order to determine groundwater flow direction within the shallow unconsolidated aquifer. Since 1989, water level gauging data has been collected during the periodic monitoring of selected wells. Each well is gauged with an electronic water level indicator to determine water levels. The water depths were subtracted from the top of casing elevation to measure the water table elevation in each well. Historical groundwater elevation data is maintained by Aerojet.

Shallow Groundwater Flow

The onsite saturated soils can be characterized as a continuous zone of shallow unconfined groundwater. Recharge to this zone is primarily from direct precipitation. Flow directions of the shallow aquifer are toward topographic lows and thus commonly mimic topography.

Based on the water level gauging described above, the direction of shallow groundwater flow at the TTF area was determined to be to the northwest. Figure 9 of the Hydrogeological Investigation illustrates the groundwater contours and flow direction. At the request of VDEQ during recent permitting efforts for the TTF, Aerojet prepared additional groundwater contour maps using quarterly (January, April, July, and October) water level data from 2006 as well as data collected in October 2009. These contour figures illustrated that the hydraulic gradient is consistently to the northwest, which is consistent with the October 1989 groundwater elevation contour map, Figure 9 in the Hydrogeological Investigation. This consistency indicates that groundwater flow direction in the vicinity of the TTF has not changed significantly with time.

Slug Tests

Slug tests were performed in the groundwater monitoring wells on the site to estimate hydraulic conductivity of the shallow groundwater aquifer. Slug test results were reported in the Hydrogeological Investigation. The slug test data were evaluated using the method of Bower and Rice (1976). The hydraulic conductivity results ranged from 4E-05 cm/sec to 1E-03 cm/sec. The typical variation in permeability on the site was reported to be between 1E-04 and 6E-04 cm/sec.

The rate of groundwater movement within the shallow aquifer may be estimated using a form of Darcy's equation:

V = Ki/n, where:

> K = hydraulic conductivity = 1E-04 to 6E-04 cm/sec = 0.28 to 1.70 ft/day
> i = hydraulic gradient = (404 ft – 384 ft) / 650 ft = 0.03 ft/ft
> n = effective porosity (estimated) = 0.25

Using a hydraulic gradient of 0.03 ft/ft yields a range of expected groundwater flow rate (Darcian velocity) ranging from 0.03 to 0.2 ft/day for the area of the TTF. This range is equivalent to 11 to 74 ft/year.

8.2 Historical Groundwater Quality Data

A groundwater monitoring network was established during the preparation of the Hydrogeological Investigation. The Hydrogeological Investigation was conducted to identify subsurface soil and groundwater conditions to enable preparation of an effective groundwater monitoring network.

The quality of groundwater beneath the Aerojet Facility has been monitored since the pre-burn phase. In general, the pre-burn monitoring was conducted to establish baseline concentrations of contaminant indicator parameters in groundwater in the vicinity of the TTF. As reported in the Hydrogeological Investigation, separate shallow and deep groundwater aquifers were not identified beneath the Facility. Clusters of groundwater monitoring wells at varying depths within the shallow aquifer were installed circumscribing the TTF area.

As part of the EPA RD&D permit for thermal treatment operations, ARC, and Aerojet since October 2003, have conducted monthly monitoring of groundwater for indicator parameters consisting of the following constituents: chromium, ammonia, lead, pH, total organic carbon (TOC), total organic halides (TOX), total suspended solids (TSS), and specific conductivity (SC). Additionally, an extended list of parameters that includes metals, VOCs and SVOCs has been analyzed on an annual basis.

Historical analytical results for groundwater media from 2006 – 2010 have been included in this Closure Plan in Attachment D. Aerojet has also included baseline groundwater data, collected in 1989-1990 prior to open burning operations at the TTF, in Attachment F. The data in these two attachments is included for reference purposes and for possible use in statistical comparisons of TTU closure sample data.

8.3 Description of Groundwater Monitoring System

The groundwater monitoring system has been designed to monitor the TTF within a specified zone up to the defined point of compliance. Monitoring well design and depth of screened intervals were selected to identify any release of potential contaminants horizontally and vertically.

8.3.1 Point of Compliance Location

The location of the thermal treatment facility is shown on Figure 1. The limit of the TTF (as a waste management unit) is defined by an imaginary plane circumscribing the four individual thermal treatment units within the TTF. The point of compliance is a vertical surface located at the hydraulically down gradient limit of the waste management area (TTF) that extends down into the uppermost aquifer underlying regulated units. The hydraulically down gradient limit of the TTF is defined by the northern and western barriers (earthen berms) designed to contain the waste in each of the four TTUs. The uppermost aquifer beneath the Facility has been identified as the saturated unconsolidated sediments and the zone of weathered bedrock overlying the schist bedrock in this area.

8.3.2 Monitoring Well Locations

One background groundwater monitoring well cluster (MWs-2A, 2B, 2C, 2D, 2E) was installed for background water quality monitoring of the thermal treatment facility. The wells were installed so that their screened portions were placed within the saturated unconsolidated sediments. The well cluster is located on the southern corner of the up-gradient (southeastern) end of the TTF. The location of the background groundwater monitoring well cluster is shown on Figure 6. As discussed in conference calls and related correspondence between Aerojet and the VDEQ that are contained in Attachment J to this Closure Plan, MW-2 will conditionally be used as the background monitoring well during closure monitoring. Aerojet will continue to conditionally use MW-2 as background (as approved by the VDEQ) unless data (water level and analytical) collected during the closure monitoring suggests otherwise. Background concentrations will ultimately be established utilizing groundwater data collected during the proposed quarterly monitoring events. Because MW-2 has only been conditionally approved by VDEQ as the background well, all of the shallowest monitoring wells in the well network, including MW-1B if supported by measurement data, will be sampled for all constituents during all four monitoring events. Upon the VDEQ's final approval of a background well, the necessary background concentrations will then be calculated as described in Sections 5.2.2 and 8.4.14.2.

The MW-3 well cluster is consistently located side-gradient of the TTF, but could detect a potential release from the up-gradient (southeastern) end of the TTF. Three monitoring well clusters, OW-1, MW-4, and MW-5, are located consistently downgradient of the TTF. These four compliance point groundwater monitoring well clusters (OWs-1A, 1B; MWs-3A, 3B, 3C; MWs-4A, 4B, 4C; and MW-5A) were installed so the well screen portions were positioned within the saturated unconsolidated sediments and the zone of weathered bedrock. The locations of the compliance point groundwater monitoring wells are shown on Figure 6.

The MW-1 well cluster, located side-gradient to the TTF, is historically dry. These wells will not likely be used as part of the closure monitoring of groundwater unless conditions change that may warrant their inclusion in the monitoring network. Aerojet will include MW-1B in the monitoring network to be gauged for depth to water each quarter. If groundwater elevation measurement data support sampling, and sufficient water volume can be purged and provide adequate volume for sample collection, then MW-1B will be included in the quarterly sampling program to assist in determining actual background location and groundwater quality conditions.

8.3.3 Description of Monitoring Well Design

The groundwater monitoring wells were constructed utilizing the appropriate lengths of two-inch diameter, flush threaded PVC 0.020-inch machine slotted well screen and 2-inch diameter, flush-threaded PVC solid well casing. The annular space between the well screen and the borehole was backfilled with uniform washed silica filter sand to a height of 1 to 2 feet above the screen to enhance the hydraulic connection between the well screen and the aquifer. The annular space between the solid well casing and borehole was sealed with hydrated sodium bentonite pellets in a minimum 2-foot thick layer. A portland cement/sodium bentonite slurry was placed (with a tremie pipe) above the bentonite seal to approximately two feet below grade. The wells were completed approximately two feet above grade with five-inch diameter locking steel casings.

The steel casings were installed so that approximately two feet of the casing extends above the ground. The annular space between the steel casing and the borehole was backfilled with portland cement grout. An approximately two-foot diameter concrete pad was installed at grade around the steel casing with sufficient pitch to drain surface water away from the well. Monitoring well construction details are presented in the Hydrogeological Investigation. A summary of monitoring well elevations and screened intervals is presented in Table 5.

Following installation, each monitoring well was developed to enhance its hydraulic connection to the aquifer and to remove sand, silt, or clay that may have entered the wells during installation activities. Each well was developed by manual surging and bailing with a decontaminated 1.5-inch diameter PVC ball-check bailer.

8.4 Groundwater Monitoring Program

A sampling program will be conducted to collect and analyze groundwater samples from the existing TTF monitoring wells. During the active life of the thermal treatment facility, the groundwater quality has been continuously monitored (see Section 8.2 above). This section describes the groundwater monitoring objectives, sampling rationale, sampling frequency and locations, sampling parameters, sampling protocols, and data evaluation that will be used in the groundwater monitoring program during closure. Groundwater sampling will be conducted in accordance with the procedures outlined in this section.

8.4.1 Objective of Groundwater Monitoring Program

The objective of the groundwater monitoring program is to obtain representative groundwater analytical data which can be utilized in evaluating the TTF groundwater conditions and demonstrate clean closure of the groundwater at the TTF. The information presented herein presents a step-by-step format for controlling the planning, collecting, handling, documentation, shipping, analysis, and data evaluation of groundwater samples obtained at the Aerojet site.

8.4.2 Data Quality Objectives

Data quality objectives are to meet practical quantitation limits and all the requirements for accuracy, precision, representativeness, comparability and completeness. Data quality objectives are designed to meet applicable regulatory criteria for the analytes listed on Table 2.

8.4.3 Sampling Frequency

The shallowest well in each of the four compliance well clusters (OW-1A, MW-3A, MW-4A, and MW-5A) and the shallowest well in the background well cluster (MW-2A) will be sampled quarterly for one year. MW-1B will also be sampled during quarterly monitoring if conditions warrant (see Section 8.3.2). Aerojet may propose to modify and/or add wells to the quarterly monitoring program after reviewing the data collected during the groundwater monitoring closure period. Aerojet will require approval of the VDEQ to modify the closure groundwater monitoring well network from the four compliance wells and one background well, and additionally MW-1B if conditions warrant, as stated above.

8.4.4 Sampling Parameters

The shallowest well in each well cluster will be sampled quarterly for the parameters listed on Table 2. Table 2 includes the sample parameters, analyses, containers, preservation, and holding times.

8.4.5 Equipment Requirements

The following equipment or equivalent equipment is required for the sampling of the monitoring wells under this program:

- Field log books and/or field data sheets
- Latex or chemical resistant gloves
- Water level meter
- Calculator (to determine well volumes)
- Variable speed electric submersible pump (e.g., Redi-flo by Grundfos™)
- Polyethylene tubing (e.g., 3/8" I.D., ½" O.D.)
- Receptacles to contain well purge water or granular activated carbon vessel to filter purge water prior to discharge to the ground surface
- A multi-parameter water quality meter such as those manufactured by Horiba™, that is capable of measuring pH, temperature, conductivity, ORP, dissolved oxygen, and turbidity
- Teflon™ bailers and polypropylene line
- 0.45 micron filters
- Laboratory-provided sample containers (with preservative as needed)
- High impact resistant plastic coolers (sample cooling and shipping)
- Packing materials (absorbent materials such as bubblewrap, vermiculite, or Styrofoam packing materials, zip-lock bags for ice samples, labels, custody seals, packing tape, chain of custody records, shipping air bills)
- Decontamination equipment (tubs, brushes, non-phosphate detergent wash, distilled or deionized water, 0.1 N HCL, acetone, spray bottles)

8.4.6 Decontamination Procedures

It is important that all equipment used for the sampling of groundwater wells be cleaned before and after each use at a specific well. This includes any piece of equipment that comes in contact with the well water. Cross contamination from one well to another and introduction of outside contaminants into the well or sample are the primary sources of unrepresentative samples and questionable data. The equipment decontamination procedures incorporate both metals and organics decontamination and are indicated below:

- Place a piece of clean, impermeable plastic on the ground and around a berm, creating a decontamination area.
- Fill two five-gallon buckets, one with a low phosphate detergent and tap water wash, the other with a tap water rinse. Each bucket will have a dedicated stiff scrub brush and/or bristle test tube brush. Place buckets on impermeable plastic cover within decontamination area (e.g., constructed of double layer of 8-mil polyethylene sheeting wrapped over a 4x4 wood frame).
- Scrub sampling equipment first in the soap wash and then in the tap water rinse using the dedicated brushes.
- Rinse equipment with 0.1 N nitric acid rinse using a spray bottle or equivalent method (when cross contamination from metals is a concern).
- Rinse equipment in a third five-gallon bucket with deionized and/or distilled water.
- Rinse equipment with isopropyl alcohol using a spray bottle or equivalent method (when cross contamination from VOCs or SVOCs is a concern).
- Rinse equipment in the third five-gallon bucket with deionized and/or distilled water.
- Any water draining from decontamination procedures will be collected within the bermed area and containerized for appropriate offsite disposal.
- Let equipment air dry on plastic.

Note that dedicated bailers may be used in each monitoring well at a minimum and possibly during each sampling event. These bailers, one per monitoring well, would remain inside the well casing (suspended above the water table) during periods of nonuse and will be dedicated to the groundwater sampling of a particular monitoring well (e.g., the bailers will not be interchangeable between monitoring wells). The use of dedicated bailers would eliminate the need to decontaminate bailers in the field and will thus eliminate any possible analytical data suspected to be the result of field decontamination procedures.

8.4.6.1 Groundwater Sampling Waste Disposal

Manage investigation Derived Waste (IDW) in accordance with the VDEQ "Policy for the Handling of Investigation Derived Wastes (IDW)" (and Addendum) as well as appropriate EPA IDW policies (e.g., Management of Investigation-Derived Waste During Site Investigations, May 1990, EPA/540/G-91/009). Regardless of sampling method, all disposable sampling equipment (e.g., latex gloves, plastic tubing, etc.) will be collected and placed into 55-gallon drums. Each 55-gallon drum of disposable sampling equipment will initially be labeled as "Hazardous Waste" with the accumulation start date and description of the contents pending receipt of the laboratory analysis of the groundwater samples from which the waste was derived. Depending on the results of the groundwater sampling, additional analysis of the sampling waste material may be necessary for waste disposal purposes. The containerized sampling wastes will be characterized and disposed of in accordance with all applicable state and federal regulations including but not limited to 40 CFR Parts 261 and 268.

8.4.7 Field Measurements, Calculations, and Purging

The primary consideration is to obtain a representative sample of the groundwater by guarding against mixing the sample with stagnant (standing) water in the well casing. In a non-pumping well, there will be little or no vertical mixing of the water and stratification may occur. The well water in the screened section will mix with the groundwater due to normal flow patterns, but the well water above the screened section will remain isolated and become stagnant. Persons sampling should realize that stagnant water might contain foreign material introduced from the surface, resulting in an unrepresentative sample and misleading data.

All monitoring wells will be pumped prior to withdrawing the samples to be sent to the lab for analysis. This evacuation of water from the well allows for the influx of ambient water from the water-bearing zone. Note that stabilization (to within ten percent) of pH, specific conductivity, temperature, dissolved oxygen, ORP, and turbidity must occur prior to groundwater sample acquisition. The stabilization process typically requires the purging of a minimum of 3 to 5 well casing volumes. In order to calculate the amount of water in one well volume, the following information about the well must be obtained:

- Diameter of the well casing, usually PVC pipe within the steel casing well head.
- Depth to static water level - feet below the top of the well casing. Static water level may be obtained by slowly lowering electronic water level meter probe into well. An audible buzzer will sound when groundwater is encountered. Record depth to groundwater relative to casing height elevation from flat measuring tape, connecting probe to meter.
- Depth to bottom of the well from top of well casing. Well depth may be obtained by lowering the probe to the bottom of the well to measure total depth of the well or from historical records. Record this measurement.

To determine the static water volume to be purged, the standard calculation is $V = \pi \times r^2 \times h$, where:

V	=	volume of water (cubic feet)
π	=	3.14
r	=	radius of well (feet)
h	=	height of column of water in well (feet)

Determine the well volume in gallons by using the conversion factor of 7.48 gallons per cubic foot. This result will give the amount of water in gallons that must be evacuated for one well volume. Three to five well volumes will typically be evacuated prior to parameter stabilization and collection of samples. Calculations for determining purge volumes will be documented in the field log books or field data sheets.

Well purging procedures are as follows:

- Attach new (dedicated) poly tubing to decontaminated stainless steel submersible pump.
- Slowly lower pump, tubing and electrical lead wires to approximate depth of 5 feet above well bottom.

- Purge well of sufficient volume of water until parameter stabilization is achieved.
- Collect purge water in 55-gallon drums or equivalent container(s). Manage Investigation Derived Waste (IDW) in accordance with the VDEQ “Policy for the Handling of Investigation Derived Wastes (IDW)” (and Addendum) as well as appropriate EPA IDW policies (e.g., Management of Investigation-Derived Waste During Site Investigations, May 1990, EPA/540/G-91/009).

Measurements for pH, temperature, conductivity, ORP, turbidity, and dissolved oxygen will be obtained during the purging cycle to verify the evacuation of the static water from the well column. The field chemistry measurements are recorded in the logbook or on the field data sheets at appropriate time intervals (e.g., 3 minutes). When these parameters stabilize to within a ± 10% range, it indicates that the static water in the column has been removed and that groundwater from the localized water bearing zone has entered into the well column. The meter(s) for measuring pH, temperature, conductivity, ORP, turbidity, and dissolved oxygen will be calibrated in accordance with the provided manufacturer’s recommendations each day sampling will occur, or in the case of rental equipment, documentation that the equipment was calibrated prior to rental will suffice.

8.4.8 Sampling Procedures

The following procedural steps identify the methods for the collection of ground-water samples. To assure the accuracy of the sampling techniques used, it is important to document and record all pertinent well data information in the field log book or field data sheet, including but not limited to well location, well diameter, depth to water level, total well depth, date, time, field personnel and other field characterizations.

Samples will be collected and containerized for each parameter and constituent that are included in Aerojet’s monitoring program (Table 2) in the order of volatilization sensitivity of the parameters, as follows (note not all parameters/constituents below are included in Aerojet’s monitoring program):

- Initial pH, Temperature, Conductivity, ORP, Turbidity, and Dissolved Oxygen (field measurement)
- Volatile Organics
- Dissolved Gases (e.g., ethane, ethene, methane)
- Volatile Fatty Acids (e.g., lactic, pyruvic, butyric)
- Total Organic Halogens
- Total Organic Carbon
- Extractable Organics (Semi-Volatile Organics)
- Pesticides/Herbicides
- PCBs
- Total Metals and Dissolved Metals
- Total Phenols
- Cyanide
- Sulfate, Fluoride, and Chloride
- Nitrate
- Final pH, Temperature, Conductivity, ORP, Turbidity, and Dissolved Oxygen (field measurement)

Groundwater monitoring wells will be sampled within two hours of purging. Should a well be pumped dry, samples shall be taken within two hours, even if repeated visits to the well are required to obtain an adequate number of groundwater samples, as follows:

- Upon completion of purging the required well volumes or until parameters stabilize, obtain the necessary samples using the dedicated Teflon™ bailer or fill sample containers under low flow conditions from the end of the poly tubing attached to the pump discharge.
- Note times, dates, sample numbers, and well number on the sample labels and in log book or field data sheets at the time of or prior to sample acquisition.
- In the case of field-filtered samples for dissolved metals, after sampling for total metals, attach the .45 micron filter to the pump discharge tubing and fill sample containers for dissolved metals analysis. (Note that samples for dissolved metals could also be filtered

in the laboratory. If requesting laboratory filtration, samples must be collected in unpreserved containers.) Remove the filter and continue sample collection in the order specified above.

- Samples must be maintained at 4ºC (in ice chest or refrigerator) upon sample acquisition and subsequent transportation to the analytical laboratory.
- Secure the well with a lock to prevent tampering.

8.4.9 Sample Containers, Methods and Preservation

All groundwater samples will be placed in the sample containers and preserved according to Table 2. All samples will be kept on ice at a temperature of 4°C from the time of sample collection to delivery at the laboratory.

8.4.10 Sample Handling and Shipping

- All samples need to be individually identified using sample tags and/or labels.
- Once the sample has been collected and labeled, it must be stored on ice or refrigerated at 4°C throughout the handling and shipping process.
- Complete COC form. Identify sample numbers, sample containers, times, dates, samplers, analysis, and sign off on the form. Reference cooler number and common carrier air bill number on the form for tracking purposes if possible.
- Place sealed samples into high impact resistant coolers for transportation and shipping.
- Ice should be place in zip-lock type bags to avoid leaking during shipment.
- Keep 1 copy of the COC forms. Place the remaining copies of the forms into zip-lock type bag, seal and place inside the cooler or tape to outside of cooler.

8.4.11 Sample Labeling, Chain of Custody, and Documentation

Sample labeling will be instituted for each sample collection event and will include the following provisions:

- Durable, water-proof sample labels will be affixed to each sample container indicating (with water proof ink):
    - Site identification
    - Sample identification
    - Date and time of collection
    - Name or initials of collector
    - Analytes and method of analysis

A COC will be prepared for each sample collection event to establish the documentation necessary to trace sample possession from time of collection. The record shall contain:

- Chain-of-custody identification number
- Sample identification and number
- Signature of collector
- Date and time of collection
- Sample type (media)
- Analytes and method of analysis requested
- Signature of sample recipients
- Dates/times of sample possession

Documentation of all sampling events must be recorded and maintained to verify the sampling process. It is important to record all of the pertinent information and keep an accurate file concerning the sampling events.

Field notes will be maintained that document:

- Date of sampling event
- Names of field technicians
- Well identifications
- Well depths and static water levels
- Well purging equipment and results
- Well sampling sequence
- Analytical methods requested
- Sample transport and shipping information
- Weather climatic conditions
- Relevant field observations

8.4.12 Quality Control Samples

The quality control (QC) samples to be collected during each sampling event are identified in Section B.5 of the QAPP contained in Attachment I.

8.4.13 Data Validation and Reporting

Data validation criteria used by the analytical laboratory for this program will be stated in the laboratory's Quality Assurance Plan. Data reported to VDEQ will include:

- Project description.
- Case narratives.
- QC Summary – Method, surrogate recoveries, matrix spike/matrix spike duplicate recoveries, method/trips/field blank results.
- Qualifier, corrective, and usability results.

- Sample Data – Specific compound results, sample analysis dates, results of any tentatively identified compounds.
- Quantitation limits for all required parameters.

Data validation and QA/QC will meet all the requirements for accuracy, precision, representativeness, comparability and completeness. The data evaluation and validation report will include any qualifiers and the case narratives needed to explain any corrective actions taken during the chemical analysis. Laboratory QC information will discuss laboratory control samples (LCSs), laboratory duplicates, matrix spikes (MSs), matrix spike duplicates (MSDs), surrogate standards, internal standards, method blanks, and instrument blanks. MSs, MSDs, and a LCS will be analyzed for every batch of up to 20 samples and serve as a measure of analytical accuracy. (Surrogate standards are added to all samples, blanks, MSs, MSDs, and LCSs which are analyzed for organic compounds in order to evaluate the method's accuracy and to help determine matrix interferences.)

8.4.14 Groundwater Sampling Data Evaluation

Data collected during the groundwater monitoring will be compared to the clean closure decontamination standards specified in Section 5.2 of this CP. The evaluation of groundwater data will occur following the completion of all four quarters of monitoring.

Consistent with the closure performance standards for TTF soils, groundwater performance standards will include non-detect of analytes, background, and risk-based. Groundwater concentrations in compliance wells will be compared to groundwater concentrations in the background well cluster to determine if a significant difference exists between the data sets. Refer to Attachment G for recommended statistical analyses. Aerojet will also consult the EPA guidance *"Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009 (EPA 530/R-09-007)"* when conducting statistical analysis on groundwater data. If the statistical comparisons of downgradient monitoring data to the background monitoring data indicate that there are no statistically significant increases (SSI) over background, then the regulated units shall be determined to be clean closed for groundwater. If the statistical comparisons indicate that closure constituents are above background, then a risk-based evaluation must be performed in accordance with the VDEQ guidance on risk-based closure (contained in Attachment H to this CP). If constituents remain in groundwater above acceptable, risk-based levels, then a contingent post-closure care plan must be submitted to the VDEQ for approval and implementation.

8.4.14.1 Non-Detect of Analytes

Concentrations of HCOCs in compliance samples that are reported as "non-detect" will be managed as described in Section 5.2.1. If all HCOC concentrations meet the "analytical non-detect" performance standard described in Section 5.2.1, clean closure will have been demonstrated for groundwater and no further sampling or remedial actions are required.

8.4.14.2 Comparison to Background

For naturally occurring inorganic constituents, Aerojet will compare detected concentrations in closure samples collected from compliance wells to background data. At this time, monitoring well MW-2 is conditionally approved by VDEQ as representing background conditions. Refer to Section 8.3.2 for additional information on background wells. Background data will include samples collected during quarterly monitoring events from well cluster MW-2 (if finally approved as background) and may possibly include data reported from historical groundwater sampling, as contained in Attachments D and F to this CP. Refer to Section 5.2.2 for the methods of comparing HCOC concentrations in closure samples to background concentrations. HCOCs that are reported below or not statistically different than background concentrations will be considered to have attained the closure performance standard for clean closure.

If all HCOC concentrations in groundwater compliance samples meet the "analytical non-detect" closure performance standard or are reported below or not statistically different than background concentrations, clean closure will have been demonstrated for groundwater and no further sampling or remedial actions are required.

8.4.14.3 Risk Assessment

For constituents that do not meet the "analytical non-detect" or "background" closure performance standard as determined through the methods described in Sections 8.4.14.1 and 8.4.14.2 above, Aerojet will follow the procedures contained in Section 5.2.3 of this CP. Aerojet will assess the risk associated with these HCOCs, and if necessary, Aerojet will develop numerical site-specific, risk-based clean closure decontamination standards at the time of closure in accordance with the methods specified in Section 5.2.3 of this CP.

If all HCOC concentrations within groundwater compliance samples meet the risk-based clean closure decontamination standards (in combination with HCOCs that meet the "analytical non-detect" or "background" closure performance standard), clean closure will have been demonstrated for groundwater and no further sampling or remedial actions are required.

If HCOC concentrations exceed the risk-based clean closure decontamination standards, Aerojet will notify the VDEQ and develop a post-closure care plan for groundwater.

9.0 MANAGEMENT, CHARACTERIZATION, AND DISPOSAL OF CLOSURE-GENERATED WASTE

Sampling constituents for waste characterization are shown on Table 4 and this table is discussed in Section 4.5 of this Closure Plan.

The closure procedures require that different types of closure-generated wastes be segregated from one another and stored in separate containers, and representatively sampled and tested so to assure compliance with the VHWMR and the RCRA, including the following:

- Disposal of Hazardous Wastes - All wastes (solids and liquids) generated during closure that are demonstrated to be hazardous must be disposed in a permitted hazardous waste landfill or treated in a RCRA permitted treatment storage disposal (TSD) facility. Disposal of regulated wastes must comply with 40 CFR Part 268, Land Disposal Restrictions, Subpart D, Treatment Standards, § 268.40, Applicability of Treatment Standards, and comply with § 268.48, Universal Treatment Standards, for wastewaters and non-wastewaters. (See § 268.48, for definitions of wastewater and non-wastewaters.) Land disposal restriction treatment standards for contaminated soil are delineated under § 268.49, Alternative LDR treatment standards for contaminated soil. Disposal of all hazardous wastes will require manifest documentation of shipment to a permitted TSD. Transportation of hazardous waste generated during closure activities will be in accordance with the VHWMR and require a transporter with a current Hazardous Waste Transporter Permit.
- Disposal of Non-Hazardous Solid Wastes - All waste materials (other than non-hazardous wastewaters) generated in the closure process that are demonstrated as non-hazardous are required to be disposed of as a solid waste in accordance with the Virginia Solid Waste Management Regulations (VSWMR). Disposal of all non-hazardous wastes will require documentation of disposal from the authority regulated under the VSWMR.
- Non-Hazardous Wastewaters - Wastewaters generated in the closure process that are demonstrated as non-hazardous are required to be disposed to a publicly or privately owned wastewater treatment plant regulated by the Clean Water Act (CWA) or

equivalent. Disposal of all non-hazardous wastewaters will require documentation of prior approval for disposal, and documentation of disposal from the authority regulated under the CWA.

- Contained in Policy - Under the EPA's "contained in" policy, contaminated media (i.e., debris, soil, groundwater, sediments) that contain RCRA-listed wastes must be managed as if they were hazardous waste until the media no longer contain the hazardous waste (i.e., until decontaminated) or until they are delisted. To date, the EPA has not issued any definitive guidance as to when, or at what levels, environmental media contaminated with hazardous waste no longer contain the hazardous waste. Until such guidance is issued, the Regions or authorized States may determine these levels on a case-specific basis. The EPA also suggests that when making a determination as to when contaminated media no longer contains a hazardous waste that a risk assessment approach be used that addresses the public health and environmental impacts of the hazardous constituents remaining. Any debris, wastes, washwater, rinseate, wastewaters, leachate, soils, subsoils, residues, and equipment contaminated with waste from the HWMUs are required to be managed as a hazardous waste in accordance with the VHWMR and RCRA and are required to be disposed in a permitted hazardous waste landfill or a RCRA permitted treatment storage disposal (TSD) facility, unless demonstrated by testing that they are nonhazardous in accordance with specified decontamination standards of the approved Closure Plan and testing requirements for generated wastes specified in the VHWMR and the RCRA. (See the three standards below, which determine whether equipment, debris, residues, waste, wastewater, or media, are considered hazardous.

Contaminated residues and/or environmental media contain hazardous waste when the following occurs:

1. When the residues or media (e.g., aggregate, wastewaters, soil, and groundwater, etc.) exhibit a characteristic of hazardous waste in accordance with 40 CFR Part 261, Subpart C, Characteristics of Hazardous Waste, § 261.20.
2. When a residue, waste, or wastewater removed from a regulated unit, which manages a listed waste under 40 CFR Part 261, Subpart D, Lists of Hazardous Wastes, contains a listed hazardous waste constituent.

3. When a contaminated media ((i.e., debris, soil, sediments, or groundwater) are contaminated with concentrations of hazardous waste constituents that are above health or risk-based levels.

The "contained in" policy applies to characteristic hazardous waste and listed hazardous waste contained in environmental media, which includes groundwater, surface water, soils, and environmental debris (as defined in 40 CFR 268.2(g)). The "contained in" policy is not applicable to rain water or rinseate. As discussed in a conference call between Aerojet and the VDEQ, the "contained in" policy (4th bullet item above including sub-items 1) through 3) above) is only applicable to listed hazardous wastes. Table 4, discussed in more detail in Section 4.5 (along with the "contained in" policy), shows a list of waste characterization constituents and the applicable regulatory criteria to determine if listed wastes are "contained in" the waste being analyzed.

- Demonstration by Testing - The demonstration by testing includes the analyses for all listed hazardous waste constituents managed at the facility and an analysis that the waste does not exhibit a characteristic of hazardous waste in accordance with 40 CFR 261, Subpart C.

The demonstration by testing requirement (5th bullet item above), referenced in the "contained in" policy in the 4th bullet item above, is also relevant to only those listed hazardous waste HCOCs or underlying hazardous constituents (UHCs) that were managed at the thermal treatment facility (i.e., the compounds that are included in the Basis for Listing Hazardous Waste for listed waste codes F002 and F005, identified in 40 CFR 261 Appendix VII), in addition to testing to show that the waste does not exhibit a characteristic of a hazardous waste in accordance with 40 CFR 261 Subpart C. Table 4 contains a list of waste characterization constituents and the applicable regulatory criteria to determine if listed wastes are "contained in" the waste being analyzed.

10.0 CLOSURE COST ESTIMATE

10.1 Closure Cost Estimate

The cost estimate for conducting closure of the four TTUs at the Aerojet, Orange County Facility is presented in Table 6. The closure cost estimate has been prepared in accordance with 40 CFR 264.142 and assumes a third party who is neither a parent nor a subsidiary of the owner or operator will conduct closure. The closure will include waste inventory treatment and disposal, equipment/structure decontamination, sampling and analysis, wash water disposal/treatment, solid debris and soil removal/disposal (if needed), groundwater monitoring, as well as closure certification and a final closure report. The closure costs are summarized by activity in Table 6, including details on rationale and assumptions for the estimates. The closure cost estimate will be updated annually to account for inflation pursuant to 40 CFR 264.142.

11.0 FINANCIAL ASSURANCE

Aerojet is providing proof of financial assurance for closure cost as required by 40 CFR 264 Subpart H, 264.143. Current financial assurance documents are provided in Attachment K. Financial assurance documentation is updated to account for inflation and change of carrier and submitted to the VDEQ on an annual basis as per the update requirements for closure cost estimates (40 CFR 264.142). Previously established closure costs at the Facility will be used for financial assurance until the VDEQ approval of this Closure Plan and new cost estimate for closure of the TTF described in Section 9.0 above. Documentation demonstrating financial assurance for closure of the thermal treatment units will be provided to the VDEQ upon approval of this Closure Plan and the new cost estimate, and will replace the previously established financial assurance documents in Attachment K.

12.0 LIABILITY REQUIREMENTS

Aerojet is providing proof of liability insurance for sudden and non-sudden accidental occurrences as required by 40 CFR 264 Subpart H. Aerojet complies with the liability requirements of 40 CFR 264.147. A copy of the most recent insurance certificate is contained in Attachment L.

13.0 CLOSURE SCHEDULE

13.1 Schedule for Closure

Aerojet will notify the VDEQ of its intent to close any single TTU or all TTUs at least 60 days prior to the date on which Aerojet expects to begin closure. Although a definitive closure date is not known, at the time of submission of this Closure Plan, Aerojet is in the process of applying for a hazardous waste storage permit with the intent of closing the TTF following issuance of the storage permit and construction of the RCRA permitted storage facility buildings. This CP identifies steps necessary to complete final closure of the TTF. When the TTF (i.e., all four TTUs combined) is no longer needed, final closure will be implemented in accordance with the schedule contained in this Closure Plan.

13.1.1 Time Allowed for Closure

In accordance with 40 CFR 264.113(a), the final volume of waste inventory will be treated or removed for offsite treatment and/or disposal within 90 days of its date of receipt. In accordance with 40 CFR 264.113(b), Aerojet will complete closure activities for soil within 180 days of receiving the final volume of hazardous waste at the TTF. The entire closure process for soil is anticipated to require no more than 180 days to complete. Aerojet will attempt to complete closure activities for groundwater within 425 days of receiving the final volume of hazardous waste at all TTUs (i.e. at final closure). Should more time be required to complete closure of soils and/or groundwater, a request for extension of closure time will be submitted as described in the following section, Extension for Closure Time. Closure operations will occur over a time and in a chain of events as specified in Figures 7 and 8 for soil and groundwater, respectively. The closure schedule in Figure 7 (Soil) is applicable to closure of all TTUs at the TTF as a group (if final closure is conducted). Closure of groundwater will begin simultaneously with closure of soil during final closure activities at the TTF. Figures 7 and 8 are embedded in the text below and show the anticipated time durations to complete closure activities for soil and groundwater respectively.

FIGURE 7
SCHEDULE OF SOIL CLOSURE ACTIVITIES

Task	Closure Activity	Days to Complete
1	Notify VDEQ 60 days prior to expected date of closure.	Prior to Closure
2	Make preparations/contacts for expected closure date (e.g., arrangements for offsite disposal of final waste materials, gather/purchase decontamination equipment and materials, notify laboratory, construct temporary decontamination and staging areas, etc.).	Prior to Closure
3	Treat final volume of energetic waste within TTU.	0 to 15
4	Field mobilization, removal of thermal treatment residue/ash, removal of sand liner from burn pans.	15 to 30
5	Decontamination and rinse sampling of TTU structures.	30 to 45
6	Receive decontamination analytical results, evaluate results and discuss with VDEQ, additional decontamination if necessary.	45 to 90
7	Initial soil sampling and characterization within TTU(s) and background locations.	45 to 60
8	Receive soil sampling analytical results, evaluate results and discuss with VDEQ, additional delineation sampling if necessary.	60 to 135
9	Soil excavation and disposal (if necessary).	135 to 165
10	Decommission temporary decontamination and staging areas (if applicable), backfill excavation and restore area.	165 to 180
11	Prepare and submit closure report and certification for soil.	180 to 240

FIGURE 8 SCHEDULE OF GROUNDWATER CLOSURE ACTIVITIES		
Task	**Closure Activity**	**Days to Complete**
1	Notify VDEQ 60 days prior to expected date of closure.	Prior to Closure
2	Make preparations/contacts for expected closure date (e.g., arrangements for offsite disposal of waste materials, gather/purchase decontamination equipment and materials, notify laboratory, etc.).	Prior to Closure
3	Treat final volume of energetic waste within TTU.	0 to 15
4	Conduct 1st quarterly sampling event for groundwater.	15 to 90
5	Conduct 2nd through 4th quarterly sampling events for groundwater, preliminary review of results.	90 to 365
6	Full evaluation of four quarters of sample data, review and discuss results with VDEQ, prepare and submit closure report and certification for groundwater.	365 to 425

13.1.1.1 Extension for Closure Time

If the final waste inventory cannot be removed within 90 days of initiating closure, Aerojet will request an extension of time to remove the final waste inventory pursuant to 40 CFR 264.113(a) and (c)(1). The petition for additional time to remove the final waste inventory will be submitted at least 30 days prior to the expiration of the 90-day inventory removal period.

Should the time estimated for partial or final closure require modification due to unforeseeable circumstances or site conditions, a request for an extension of the closure period (180-day for soil and assumed 425-day for groundwater) will be submitted to DEQ no later than 30 days prior to the end of the closure period for each media. The request shall be in accordance with 40 CFR 264.113(b) and (c)(2).

14.0 CLOSURE PLAN AMENDMENT

14.1 Modification to Closure Plan

Aerojet will submit a written request for modification should any part of the Closure Plan need to be changed. Modification of the Closure Plan is needed to authorize a change in the approved Closure Plan, at a minimum, whenever:

- Changes in operating plans or Facility design affect the Closure Plan.
- There is a change in the expected year of closure, if applicable.
- In conducting partial or final closure activities, unexpected events require a modification of the approved Closure Plan.

For changes to the Closure Plan, Aerojet will submit a written request including a copy of the amended Closure Plan for approval at least 60 days prior to the proposed change in Facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the Closure Plan. If an unexpected event occurs during the partial or final closure period, Aerojet will request a modification of the CP no later than 30 days after the unexpected event according to the criteria in 40 CFR Part 270.42.

If one or more of the TTUs is unable to be clean closed to the closure performance standards, Aerojet will immediately notify the VDEQ and submit a post-closure plan within 90 days along with an amended closure plan as noted above. If any hazardous waste constituents are to be left in the soil in concentrations that present an excess risk above acceptable levels, the thermal treatment unit(s) will be closed as a landfill(s) in accordance with 40 CFR Part 264, Subpart N, 264.310 (including 40 CFR 264.117 through 264.120).

15.0 CERTIFICATION OF CLOSURE

As discussed in Sections 5.1.3 and 5.2.3, closure of soil and groundwater will occur separately and under different timeframes; therefore, Aerojet will likely be preparing and submitting separate Closure Reports and Certifications of Closure for soil and groundwater media.

15.1 Closure Certification

Pursuant to 40 CFR 264.115, Certifications of Closure will be submitted to the VDEQ within 60 days of completion of closure for each of the soil and groundwater media, unless it is determined that a single Certification of Closure and Closure Report addressing both media is acceptable. Both a responsible Aerojet official and an independent Professional Engineer registered in the state of Virginia will certify that the TTU(s) have been closed in accordance with the requirements of the approved CP. The independent, Virginia-registered professional engineer shall sign and stamp and a duly authorized representative of Aerojet shall sign the closure certification.

The Certification of Closure will be accompanied by the following statement signed by the owner and operator:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

15.2 Closure Report

Aerojet will prepare Closure Reports (for both soil and groundwater) to accompany the Certifications of Closure and submit the reports to the VDEQ within 60 days following completion of closure for each media. The Closure Reports will contain all pertinent information regarding the closure process, including but not limited to sequence of activities, construction details, decontamination procedures, analytical results and evaluation, and waste disposal manifests.

The closure determination is contingent upon VDEQ's approval of the Certifications of Closure and the Closure Reports. The Closure Reports will include:

- A summary of closure activities
- A description of the extent of any excavations (if conducted)
- A copy of the lab-generated sampling analysis forms
- Summary tables of all sampling results
- A summary of QA/QC findings
- If performed, risk assessment results and conclusions with calculations
- The results of all statistical analyses and a sample calculation supporting the closure conclusions
- A summary of wastes generated by closure activities
- Manifests and documentation of waste disposal will be included in an appendix of the Closure Report, and a summary table of all wastes generated, treated, and disposed will be included in the body of the Closure Report and include the following: waste material description, date of waste generation, date of removal, gallons removed, pounds removed, designated TSD Facility or other facility, waste codes managed, laboratory analyses, and Manifest Document Numbers.

16.0 POST-CLOSURE

16.1 Post-Closure Plan / Contingent Post-Closure

Aerojet intends to clean-close all four of the permitted thermal treatment units of the TTF. This section is not applicable at this time. At any time, should it become apparent that removal of all residuals or attainment of the closure performance standard levels is technically or economically infeasible at one or all of the TTUs, Aerojet will amend the Closure Plan and submit both the amended closure plan and a post-closure plan to the VDEQ for approval in accordance with 40 CFR 264, Subparts G and H. If hazardous waste residuals are left in place, Aerojet will place a VDEQ-approved cap over the area (only where hazardous waste residuals are left in place). A cap would require post-closure care in accordance with the 40 CFR 264.117, 264.118, and 264.310.

TABLES

RCRA CLOSURE PLAN

THERMAL TREATMENT UNITS

Table 1
Soil Monitoring Parameters
Thermal Treatment Facility Closure
Aerojet - Orange County, VA

Constituent	Waste Source	Laboratory Analyses	Sample Containers	Sample Preservation	Holding Time	Estimated Detection Limit	Estimated Quantitation Limit
HCOCS - VOLATILE ORGANIC COMPOUNDS (ug/kg)							
Acetone	Standard Compound in Method	8260	(1) 4 oz glass jar	Cool - 4 deg. C	14 days	5	10
Acetonitrile	Standard Compound in Method	8260				5	10
Acrylonitrile	Standard Compound in Method	8260				2.5	100
Benzene	Standard Compound in Method	8260				0.5	5
Bromoform	Standard Compound in Method	8260				0.5	5
Carbon disulfide	Standard Compound in Method	8260				0.5	5
Carbon tetrachloride	Standard Compound in Method	8260				0.5	5
Clorobenzene	Standard Compound in Method	8260				0.5	5
Chloroethane	Standard Compound in Method	8260				1	5
Chloroform	Standard Compound in Method	8260				0.5	5
1,2-Dibromo-3-chloropropane	Standard Compound in Method	8260				2	5
Dichlorodifluoromethane	Standard Compound in Method	8260				1	5
1,1-Dichloroethane	Standard Compound in Method	8260				1	5
1,2-Dichloroethane	Standard Compound in Method	8260				0.5	5
1,1-Dichloroethylene	Standard Compound in Method	8260				0.5	5
trans-1,2-Dichloroethylene	Standard Compound in Method	8260				0.5	5
1,2-Dichloropropane	Standard Compound in Method	8260				0.5	5
cis-1,3-Dichloropropene	Standard Compound in Method	8260				0.5	5
trans-1,3-Dichloropropene	Standard Compound in Method	8260				0.5	5
Ethylbenzene	Standard Compound in Method	8260				0.5	5
Freon 113 (1,1,2-Trichloro-1,2,2-trifluoroethane)	Process Solvent	8260				1	5
Isobutyl Alcohol	Standard Compound in Method	8260				50	100
Methyl Chloride (Chloromethane)	Standard Compound in Method	8260				2	5
Methylene Chloride	Process Solvent	8260				1	5
Methyl Ethyl Ketone	Process Solvent	8260				2.5	10
Methyl Butyl Ketone	Standard Compound in Method	8260				2.5	10
Methyl Methacrylate	Standard Compound in Method	8260				2.5	5
1,1,1,2-Tetrachloroethane	Standard Compound in Method	8260				0.5	5
1,1,2,2-Tetrachloroethane	Standard Compound in Method	8260				0.5	5
Tetrachloroethylene	Standard Compound in Method	8260				0.5	5
Tetrahydrofuran	Process Solvent	8260				25	50
Toluene	Process Solvent	8260				0.5	5
1,1,1-Trichloroethane	Process Solvent	8260				0.5	5
1,1,2-Trichloroethane	Standard Compound in Method	8260				0.5	5
Trichloroethylene	Standard Compound in Method	8260				0.5	5
Trichlorofluoromethane	Standard Compound in Method	8260				1	5
Vinyl Chloride	Propellant Formulation (PVC)	8260				1	5
Xylene (total)	Standard Compound in Method	8260				0.5	5

Table 1
Soil Monitoring Parameters
Thermal Treatment Facility Closure
Aerojet - Orange County, VA

Constituent	Waste Source	Laboratory Analyses	Sample Containers	Sample Preservation	Holding Time	Estimated Detection Limit	Estimated Quantitation Limit
HCOCS - SEMI VOLATILE ORGANIC COMPOUNDS (ug/kg)							
Acenapthylene	Standard Compound in Method	8270	(1) 4 oz glass jar	Cool - 4 deg. C	14 days (extract)	82.5	165
Acenapthene	Standard Compound in Method	8270			40 days (analyses)	82.5	165
Anthracene	Standard Compound in Method	8270				82.5	165
Benzo (a) anthracene	Standard Compound in Method	8270				82.5	165
Benzo (b) fluoranthene	Standard Compound in Method	8270				82.5	165
Benzo (k) fluoranthene	Standard Compound in Method	8270				82.5	165
Benzo (g,h,i) perylene	Standard Compound in Method	8270				82.5	165
Benzo (a) pyrene	Standard Compound in Method	8270				82.5	165
Benzoic Acid	Standard Compound in Method	8270				330	5000
Benzyl Alcohol	Standard Compound in Method	8270				82.5	165
Bis(2-chloroethoxy)methane	Standard Compound in Method	8270				82.5	165
Bis(2-chloroethyl) ether	Standard Compound in Method	8270				82.5	165
Bis(2-chloroisopropyl) ether	Standard Compound in Method	8270				82.5	165
Bis (2-ethylhexyl) phthalate	Standard Compound in Method	8270				82.5	165
4-Bromophenyl-phenylether	Standard Compound in Method	8270				82.5	165
Butyl benzyl Phthalate	Standard Compound in Method	8270				82.5	165
4-Chloroaniline	Standard Compound in Method	8270				82.5	165
4-Chloro-3-methylphenol	Standard Compound in Method	8270				82.5	165
2-Chloronaphthalene	Standard Compound in Method	8270				82.5	165
2-Chlorophenol	Standard Compound in Method	8270				82.5	165
4-Chlorophenyl-phenyl ether	Standard Compound in Method	8270				82.5	165
Chrysene	Standard Compound in Method	8270				82.5	165
Dibenz (a,h) anthracene	Standard Compound in Method	8270				82.5	165
Dibenzofuran	Standard Compound in Method	8270				82.5	165
Di-n-butyl Phthalate	Standard Compound in Method	8270				82.5	165
1,2-Dichlorobenzene	Standard Compound in Method	8270				82.5	165
1,3-Dichlorobenzene	Standard Compound in Method	8270				82.5	165
1,4-Dichlorobenzene	Standard Compound in Method	8270				82.5	165
3,3'-Dichlorobenzidine	Standard Compound in Method	8270				412	825
2,4-Dichlorophenol	Standard Compound in Method	8270				82.5	165
Diethyl Phthalate	Standard Compound in Method	8270				82.5	165
2,4-Dimethylphenol	Standard Compound in Method	8270				82.5	165
Dimethyl Phthalate	Standard Compound in Method	8270				82.5	165
1,3-Dinitrobenzene	Standard Compound in Method	8270				82.5	165
4,6-Dinitro-2-methylphenol	Standard Compound in Method	8270				412	825
2,4-Dinitrophenol	Standard Compound in Method	8270				412	825

Table 1
Soil Monitoring Parameters
Thermal Treatment Facility Closure
Aerojet - Orange County, VA

Constituent	Waste Source	Laboratory Analyses	Sample Containers	Sample Preservation	Holding Time	Estimated Detection Limit	Estimated Quantitation Limit
HCOCS - SEMI VOLATILE ORGANIC COMPOUNDS CONTINUED (ug/kg)							
2,4-Dinitrotoluene	Standard Compound in Method	8270	(1) 4 oz glass jar	Cool - 4 deg. C	14 days (extract)	82.5	165
2,6-Dinitrotoluene	Standard Compound in Method	8270			40 days (analyses)	82.5	165
Di-n-octyl Phthalate	Standard Compound in Method	8270				82.5	165
Fluoranthene	Standard Compound in Method	8270				82.5	165
Fluorene	Standard Compound in Method	8270				82.5	165
Hexachlorobenzene	Standard Compound in Method	8270				82.5	165
Hexachlorobutadiene	Standard Compound in Method	8270				82.5	165
Hexachlorocyclopentadiene	Standard Compound in Method	8270				82.5	165
Hexachloroethane	Standard Compound in Method	8270				82.5	165
Indeno (1,2,3-cd) pyrene	Standard Compound in Method	8270				82.5	165
Isophorone	Propellant Formulation (IPDI)	8270				82.5	165
2-Methylnapthalene	Standard Compound in Method	8270				82.5	165
2-Methylphenol (o-Cresol)	Standard Compound in Method	8270				82.5	165
3-Methylphenol (m-Cresol)	Standard Compound in Method	8270				82.5	165
4-Methylphenol (p-Cresol)	Standard Compound in Method	8270				82.5	165
Napthalene	Standard Compound in Method	8270				82.5	165
2-Nitroaniline	Standard Compound in Method	8270				412	825
3-Nitroaniline	Standard Compound in Method	8270				412	825
4-Nitroaniline	Standard Compound in Method	8270				412	825
Nitrobenzene	Standard Compound in Method	8270				82.5	165
2-Nitrophenol	Standard Compound in Method	8270				82.5	165
4-Nitrophenol	Standard Compound in Method	8270				412	825
N-Nitrosodiphenylamine	Standard Compound in Method	8270				82.5	165
N-Nitroso-di-n-propylamine	Standard Compound in Method	8270				82.5	165
N-Nitrosopyrrolidine	Standard Compound in Method	8270				82.5	165
Pentachlorophenol	Standard Compound in Method	8270				412	825
Phenanthrene	Standard Compound in Method	8270				82.5	165
Phenol	Standard Compound in Method	8270				82.5	165
Pyrene	Standard Compound in Method	8270				82.5	165
Pyridine	Process Solvent	8270				412	825
2,3,4,6-Tetrachlorophenol	Standard Compound in Method	8270				82.5	165
1,2,4-Trichlorobenzene	Standard Compound in Method	8270				82.5	165
2,4,5-Trichlorophenol	Standard Compound in Method	8270				82.5	165
2,4,6-Trichlorophenol	Standard Compound in Method	8270				82.5	165

Table 1
Soil Monitoring Parameters
Thermal Treatment Facility Closure
Aerojet - Orange County, VA

Constituent	Waste Source	Laboratory Analyses	Sample Containers	Sample Preservation	Holding Time	Estimated Detection Limit	Estimated Quantitation Limit
HCOCs - METALS (mg/kg)							
Aluminum	Propellant Formulation	6010/202.1	(1) 4 oz glass jar	Cool - 4 deg. C	6 months	10.0	20.0
Arsenic	Standard Compound in Method	6010		Cool - 4 deg. C	6 months	2.5	5
Barium	Propellant Formulation	6010		Cool - 4 deg. C	6 months	0.25	0.5
Cadmium	Propellant Formulation	6010		Cool - 4 deg. C	6 months	0.25	0.5
Chromium (total)	Propellant Formulation	6010		Cool - 4 deg. C	6 months	0.5	1.0
Chromium (hexavalent)	Speciation of Compound	SM3500 CR	(1) 4 oz glass jar	Cool - 4 deg. C	24 hrs / leaching	0.05	0.1
Lead	Propellant Formulation	6010		Cool - 4 deg. C	6 months	2.5	5.0
Mercury	Standard Compound in Method	Method 7471A		Cool - 4 deg. C	28 days	0.01	0.3
Selenium	Standard Compound in Method	6010		Cool - 4 deg. C	6 months	2.5	5
Silver	R&D Propellant Formulation	6010		Cool - 4 deg. C	6 months	0.25	0.5
HCOCS - EXPLOSIVES (mg/kg)							
Perchlorate	Propellant Formulation	314, 8321, 6850	(1) 8 oz glass jar	Cool - 4 deg. C	28 days	0.001	0.002
HMX	Propellant Formulation	8330	8 oz glass jar	Cool - 4 deg. C	14 days (extract)	0.1	0.25
RDX	Propellant Formulation	8330			40 days (analyses)	0.1	0.25
Nitroglycerin	Propellant Formulation	8330			14 days (extract)	0.1	0.25
HCOCS - DIOXINS/FURANS (ng/kg)*							
2,3,7,8-TCDD	Potential Combustion Biproduct	8290	8 oz glass jar	Cool - 4 deg. C	30 days (extract)	0.0200	1.0
1,2,3,7,8-PeCDD	Potential Combustion Biproduct	8290				0.5000	5.0
1,2,3,6,7,8-HxCDD	Potential Combustion Biproduct	8290				0.5000	5.0
1,2,3,4,7,8-HxCDD	Potential Combustion Biproduct	8290				0.5000	5.0
1,2,3,7,8,9-HxCDD	Potential Combustion Biproduct	8290				0.5000	5.0
1,2,3,4,6,7,8-HpCDD	Potential Combustion Biproduct	8290				0.5000	5.0
1,2,3,4,6,7,8,9-OCDD	Potential Combustion Biproduct	8290				1.0000	10
2,3,7,8-TCDF	Potential Combustion Biproduct	8290				0.0200	1.0
1,2,3,4,6,7,8,9-OCDF	Potential Combustion Biproduct	8290				0.5000	5.0
1,2,3,7,8-PeCDF	Potential Combustion Biproduct	8290				0.5000	5.0
2,3,4,7,8-PeCDF	Potential Combustion Biproduct	8290				0.5000	5.0
1,2,3,6,7,8-HxCDF	Potential Combustion Biproduct	8290				0.5000	5.0
1,2,3,7,8,9-HxCDF	Potential Combustion Biproduct	8290				0.5000	5.0
1,2,3,4,7,8-HxCDF	Potential Combustion Biproduct	8290				0.5000	5.0
2,3,4,6,7,8-HxCDF	Potential Combustion Biproduct	8290				0.5000	5.0
1,2,3,4,6,7,8-HpCDF	Potential Combustion Biproduct	8290				0.5000	5.0
1,2,3,4,7,8,9-HpCDF	Potential Combustion Biproduct	8290				1.0000	10

* Dioxins/furans to only be sampled at select soil locations only

Table 2
Groundwater Monitoring Parameters
Thermal Treatment Facility Closure
Aerojet - Orange County, VA

Constituent	Waste Source	Laboratory Analyses	*Sample Containers	Sample Preservation	Holding Time	Estimated Detection Limit (ug/L)	Estimated Quantitation Limit (ug/L)
HCOCS - VOLATILE ORGANIC COMPOUNDS							
Acetone	Standard Compound in Method	8260	(3) 40 mL glass	Cool - 4 deg. C	14 days (VOA)	2.5	10
Acetonitrile	Standard Compound in Method	8260		HCl to pH < 2		50	100
Acrylonitrile	Standard Compound in Method	8260		no headspace		2.5	10
Benzene	Standard Compound in Method	8260				0.125	1
Bromoform	Standard Compound in Method	8260				0.5	1
Carbon disulfide	Standard Compound in Method	8260				0.5	1
Carbon tetrachloride	Standard Compound in Method	8260				0.25	1
Chlorobenzene	Standard Compound in Method	8260				0.125	1
Chloroethane	Standard Compound in Method	8260				0.5	1
Chloroform	Standard Compound in Method	8260				0.125	1
1,2-Dibromo-3-chloropropane	Standard Compound in Method	8260				1	5
Dichlorodifluoromethane	Standard Compound in Method	8260				0.25	1
1,1-Dichloroethane	Standard Compound in Method	8260				0.125	1
1,2-Dichloroethane	Standard Compound in Method	8260				0.25	1
1,1-Dichloroethylene	Standard Compound in Method	8260				0.5	1
trans-1,2-Dichloroethylene	Standard Compound in Method	8260				0.25	1
1,2-Dichloropropane	Standard Compound in Method	8260				0.2	1
cis-1,3-Dichloropropene	Standard Compound in Method	8260				0.25	1
trans-1,3-Dichloropropene	Standard Compound in Method	8260				0.5	1
Ethylbenzene	Standard Compound in Method	8260				0.25	1
Freon 113 (1,1,2-Trichloro-1,2,2-trifluoroethane)	Process Solvent	8260				2	5
Isobutyl Alcohol	Standard Compound in Method	8260				50	100
Methyl Chloride (Chloromethane)	Standard Compound in Method	8260				0.5	1
Methylene Chloride	Process Solvent	8260				0.25	5
Methyl Ethyl Ketone	Process Solvent	8260				2.5	10
Methyl Butyl Ketone	Standard Compound in Method	8260				2.5	10
Methyl Methacrylate	Standard Compound in Method	8260				2.5	5
1,1,1,2-Tetrachloroethane	Standard Compound in Method	8260				0.25	1
1,1,2,2-Tetrachloroethane	Standard Compound in Method	8260				0.2	1
Tetrachloroethylene	Standard Compound in Method	8260				0.25	1
Tetrahydrofuran	Process Solvent	8260				25	50
Toluene	Process Solvent	8260				0.25	1
1,1,1-Trichloroethane	Process Solvent	8260				0.25	1
1,1,2-Trichloroethane	Standard Compound in Method	8260				0.25	1
Trichloroethylene	Standard Compound in Method	8260				0.25	1
Trichlorofluoromethane	Standard Compound in Method	8260				0.25	1
Vinyl Chloride	Propellant Formulation (PVC)	8260				0.25	1
Xylene (total)	Standard Compound in Method	8260				0.5	1

*A total of (3) 40 mL glass containers are required for all of the above VOC analyses

Table 2
Groundwater Monitoring Parameters
Thermal Treatment Facility Closure
Aerojet - Orange County, VA

Constituent	Waste Source	Laboratory Analyses	*Sample Containers	Sample Preservation	Holding Time	Estimated Detection Limit (ug/L)	Estimated Quantitation Limit (ug/L)
HCOCS - SEMI VOLATILE ORGANIC COMPOUNDS							
Acenapthylene	Standard Compound in Method	8270	(2) 1-L amber glass	Cool - 4 deg. C	7 days (extraction)	2.5	5
Acenapthene	Standard Compound in Method	8270			40 days (analyses)	2.5	5
Anthracene	Standard Compound in Method	8270				2.5	5
Benzo (a) anthracene	Standard Compound in Method	8270				2.5	5
Benzo (b) fluoranthene	Standard Compound in Method	8270				2.5	5
Benzo (k) fluoranthene	Standard Compound in Method	8270				2.5	5
Benzo (g,h,i) perylene	Standard Compound in Method	8270				2.5	5
Benzo (a) pyrene	Standard Compound in Method	8270				2.5	5
Benzoic Acid	Standard Compound in Method	8270				10	20
Benzyl Alcohol	Standard Compound in Method	8270				2.5	5
Bis(2-chloroethoxy)methane	Standard Compound in Method	8270				2.5	5
Bis(2-chloroethyl) ether	Standard Compound in Method	8270				2.5	5
Bis(2-chloroisopropyl) ether	Standard Compound in Method	8270				2.5	5
Bis (2-ethylhexyl) phthalate	Standard Compound in Method	8270				2.5	5
4-Bromophenyl-phenylether	Standard Compound in Method	8270				2.5	5
Butyl benzyl Phthalate	Standard Compound in Method	8270				2.5	5
4-Chloroaniline	Standard Compound in Method	8270				2.5	5
4-Chloro-3-methylphenol	Standard Compound in Method	8270				2.5	5
2-Chloronaphthalene	Standard Compound in Method	8270				2.5	5
2-Chlorophenol	Standard Compound in Method	8270				2.5	5
4-Chlorophenyl-phenyl ether	Standard Compound in Method	8270				2.5	5
Chrysene	Standard Compound in Method	8270				2.5	5
Dibenz (a,h) anthracene	Standard Compound in Method	8270				2.5	5
Dibenzofuran	Standard Compound in Method	8270				2.5	5
Di-n-butyl Phthalate	Standard Compound in Method	8270				2.5	5
1,2-Dichlorobenzene	Standard Compound in Method	8270				2.5	5
1,3-Dichlorobenzene	Standard Compound in Method	8270				2.5	5
1,4-Dichlorobenzene	Standard Compound in Method	8270				2.5	5
3,3'-Dichlorobenzidine	Standard Compound in Method	8270				2.5	5
2,4-Dichlorophenol	Standard Compound in Method	8270				2.5	5
Diethyl Phthalate	Standard Compound in Method	8270				2.5	5
2,4-Dimethylphenol	Standard Compound in Method	8270				2.5	5
Dimethyl Phthalate	Standard Compound in Method	8270				2.5	5
1,3-Dinitrobenzene	Standard Compound in Method	8270				2.5	5
4,6-Dinitro-2-methylphenol	Standard Compound in Method	8270				12.5	25
2,4-Dinitrophenol	Standard Compound in Method	8270				12.5	25

Table 2
Groundwater Monitoring Parameters
Thermal Treatment Facility Closure
Aerojet - Orange County, VA

Constituent	Waste Source	Laboratory Analyses	*Sample Containers	Sample Preservation	Holding Time	Estimated Detection Limit (ug/L)	Estimated Quantitation Limit (ug/L)
HCOCS - SEMI VOLATILE ORGANIC COMPOUNDS CONTINUED (ug/kg)							
2,4-Dinitrotoluene	Standard Compound in Method	8270	(2) 1-L amber glass	Cool - 4 deg. C	7 days (extraction)	2.5	5
2,6-Dinitrotoluene	Standard Compound in Method	8270			40 days (analyses)	2.5	5
Di-n-octyl Phthalate	Standard Compound in Method	8270				2.5	5
Fluoranthene	Standard Compound in Method	8270				2.5	5
Fluorene	Standard Compound in Method	8270				2.5	5
Hexachlorobenzene	Standard Compound in Method	8270				2.5	5
Hexachlorobutadiene	Standard Compound in Method	8270				2.5	5
Hexachlorocyclopentadiene	Standard Compound in Method	8270				2.5	5
Hexachloroethane	Standard Compound in Method	8270				2.5	5
Indeno (1,2,3-cd) pyrene	Standard Compound in Method	8270				2.5	5
Isophorone	Propellant Formulation (IPDI)	8270				2.5	5
2-Methylnapthalene	Standard Compound in Method	8270				2.5	5
2-Methylphenol (o-Cresol)	Standard Compound in Method	8270				2.5	5
3-Methylphenol (m-Cresol)	Standard Compound in Method	8270				2.5	5
4-Methylphenol (p-Cresol)	Standard Compound in Method	8270				2.5	5
Napthalene	Standard Compound in Method	8270				2.5	5
2-Nitroaniline	Standard Compound in Method	8270				12.5	25
3-Nitroaniline	Standard Compound in Method	8270				12.5	25
4-Nitroaniline	Standard Compound in Method	8270				12.5	25
Nitrobenzene	Standard Compound in Method	8270				2.5	5
2-Nitrophenol	Standard Compound in Method	8270				2.5	5
4-Nitrophenol	Standard Compound in Method	8270				12.5	25
N-Nitrosodiphenylamine	Standard Compound in Method	8270				2.5	5
N-Nitroso-di-n-propylamine	Standard Compound in Method	8270				2.5	5
N-Nitrosopyrrolidine	Standard Compound in Method	8270				2.5	5
Pentachlorophenol	Standard Compound in Method	8270				12.5	25
Phenanthrene	Standard Compound in Method	8270				2.5	5
Phenol	Standard Compound in Method	8270				2.5	5
Pyrene	Standard Compound in Method	8270				2.5	5
Pyridine	Process Solvent	8270				12.5	25
2,3,4,6-Tetrachlorophenol	Standard Compound in Method	8270				2.5	5
1,2,4-Trichlorobenzene	Standard Compound in Method	8270				2.5	5
2,4,5-Trichlorophenol	Standard Compound in Method	8270				2.5	5
2,4,6-Trichlorophenol	Standard Compound in Method	8270				2.5	5

*A total of (2) 1-L amber glass containers are required for all of the above SVOC analyses

Table 2
Groundwater Monitoring Parameters
Thermal Treatment Facility Closure
Aerojet - Orange County, VA

Constituent	Waste Source	Laboratory Analyses	*Sample Containers	Sample Preservation	Holding Time	Estimated Detection Limit (ug/L)	Estimated Quantitation Limit (ug/L)
HCOCS - METALS (TOTAL)							
Aluminum	Propellant Formulation	6010	(1) 250 mL poly	HNO_3 to pH < 2	6 months	50	100
Arsenic	Standard Compound in Method	6010		HNO_3 to pH < 2	6 months	5	10
Barium	Propellant Formulation	6010		HNO_3 to pH < 2	6 months	5	10
Cadmium	Propellant Formulation	6010		HNO_3 to pH < 2	6 months	5	10
Chromium (total)	Propellant Formulation	6010		HNO_3 to pH < 2	6 months	10	20
Chromium (hexavalent)	Speciation of Compound	SM3500 CR	(1) 250 mL poly	Cool - 4 deg. C	24 hours	5	10.0
Lead	Propellant Formulation	6010		HNO_3 to pH < 2	6 months	50	100
Mercury	Standard Compound in Method	7470A		HNO_3 to pH < 2	28 days	0.1	0.2
Selenium	Standard Compound in Method	6010		HNO_3 to pH < 2	6 months	5	10
Silver	R&D Propellant Formulation	6010		HNO_3 to pH < 2	6 months	5	10
*A total of (2) 500 mL poly containers are required for the above method 6010 metals analyses							
HCOCS - METALS (DISSOLVED)							
Aluminum	Propellant Formulation	6010	(1) 250 mL poly	HNO_3 to pH < 2	6 months	50	100
Arsenic	Standard Compound in Method	6010		HNO_3 to pH < 2	6 months	5	10
Barium	Propellant Formulation	6010		HNO_3 to pH < 2	6 months	2.5	10
Cadmium	Propellant Formulation	6010		HNO_3 to pH < 2	6 months	2.5	10
Chromium (total)	Propellant Formulation	6010		HNO_3 to pH < 2	6 months	2.5	20
Lead	Propellant Formulation	6010		HNO_3 to pH < 2	6 months	10	100
Mercury	Standard Compound in Method	7470A		HNO_3 to pH < 2	28 days	0.1	0.2
Selenium	Standard Compound in Method	6010		HNO_3 to pH < 2	6 months	5	10
Silver	R&D Propellant Formulation	6010		HNO_3 to pH < 2	6 months	5	10
*A total of (2) 500 mL poly containers are required for the above method 6010 metals analyses							
HCOCS - EXPLOSIVES							
Perchlorate	Propellant Formulation	314, 8321A, 6850	(1) 250 mL poly	Cool - 4 deg. C	28 days	0.1	0.2
HMX	Propellant Formulation	8330	(2) 1-L amber glass	Cool - 4 deg. C	7 days (extraction)	0.25	1
RDX	Propellant Formulation	8330			40 days (analyses)	0.25	1
Nitroglycerin	Propellant Formulation	8330				0.25	1

Table 3
Equipment/Structure Rinse Water Monitoring Parameters and Decontamination Standards
Thermal Treatment Facility Closure
Aerojet - Orange County, VA

Constituent*	Analytical Method	"Clean-Closed" Decontamination Standard [1, 2] (ug/L)	MCL or Tapwater RBC?
TCLP Metals			
Arsenic	6010	10.0	MCL
Barium	6010	2000.0	MCL
Cadmium	6010	5.00	MCL
Chromium (total)	6010	100.0	MCL
Lead	6010	15.0	MCL
Mercury	7470A	2.0	MCL
Selenium	6010	50.0	MCL
Silver	6010	71.0	RBC
Other Metals			
Chromium (hexavalent)	SM3500 CR	0.031	RBC
TCLP VOCs			
Benzene	8260	5.0	MCL
2-butanone (Methyl Ethyl Ketone)	8260	4900.0	RBC
Carbon Tetrachloride	8260	5.0	MCL
Chlorobenzene	8260	100.0	MCL
Chloroform	8260	80.0	MCL
1,4-Dichlorobenzene	8260	75.0	MCL
1,2-Dichloroethane	8260	5.0	MCL
1,1-Dichloroethene	8260	7.0	MCL
Tetrachloroethene	8260	5.0	MCL
Trichloroethene	8260	5.0	MCL
Vinyl Chloride	8260	2.0	MCL
Other VOCs			
Methylene Chloride	8260	5.0	MCL
Tetrahydrofuran	8260	3200.0	RBC
Toluene	8260	1000.0	MCL
1,1,1-Trichloroethane	8260	200.0	MCL
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	8260	53000.0	RBC
TCLP SVOCs			
o-Cresol	8270	720.0	RBC
m-Cresol	8270	720.0	RBC
p-Cresol	8270	1400.0	RBC
Pyridine	8270	15.0	RBC
Hexachloroethane	8270	0.790	RBC
Nitrobenzene	8270	0.120	RBC
Hexachlorobutadiene	8270	0.260	RBC
2,4,6-Trichlorophenol	8270	3.50	RBC
2,4,5-Trichlorophenol	8270	890.0	RBC
2,4-Dinitrotoluene	8270	0.20	RBC
Hexachlorobenzene	8270	1.0	MCL
Pentachlorophenol	8270	1.0	MCL
Energetic Compounds			
HMX	8330	780.0	RBC
RDX	8330	0.610	RBC
Nitroglycerine	8330	1.50	RBC
Perchlorate	314, 8321A, 6850	15.00	MCL
Characteristic Compounds			
pH	150.1	<2 & >12.5	N/A
Reactivity	N/A	Reactive	N/A

N/A= Not Applicable (no standard)
MCL = Federal Maximum Contaminant Level
RBC = EPA Region III Tapwater Risk-Based Concentration
* Site specific constituent list for TTF equipment decontamination evaluation is derived from Tables 1 and 2 of Closure Plan.
1. The risk-based regulatory limits for constituents on Table 3 are the MCLs and tapwater RBCs from the Regional Screening Level (RSL) Summary Table April 2012 (http://www.epa.gov/reg3hwmd/risk/human/). This table is updated regularly and the values at the time of closure would supersede the values listed on Table 3 above.
2. MCLs (http://www.epa.gov/reg3hwmd/risk/human/), if available, shall be utilized as the decontamination standards. If MCLs are not available, the corresponding Tapwater RBCs shall be utilized as the decontamination standards. MCL and Tapwater RBC values should be reviewed at the time of closure for recent changes, which may cause some of the values listed on Table 3 above to change.

Table 4
Waste Disposal Parameters and Regulatory Criteria
Thermal Treatment Facility Closure
Aerojet - Orange County, VA

Constituent[1]	Method	40 CFR Part 261 Subpart C Regulatory Limit (mg/L)	"Contained-In" Policy Listed Waste Regulatory Limit - Solids[2] (mg/kg)
TCLP Metals			
Arsenic	6010	5.0	N/A
Barium	6010	100.0	N/A
Cadmium	6010	1.0	N/A
Chromium (total)	6010	5.0	N/A
Lead	6010	5.0	N/A
Mercury	7470A	0.2	N/A
Selenium	6010	1.0	N/A
Silver	6010	5.0	N/A
TCLP VOCs			
Benzene	8260	0.50	N/A
2-butanone (Methyl Ethyl Ketone)^	8260	200.0	2.00E+05
Carbon Tetrachloride	8260	0.50	N/A
Chlorobenzene	8260	100.0	N/A
Chloroform	8260	6.0	N/A
1,4-Dichlorobenzene	8260	7.5	N/A
1,2-Dichloroethane	8260	0.50	N/A
1,1-Dichloroethene	8260	0.70	N/A
Tetrachloroethene	8260	0.70	N/A
Trichloroethene	8260	0.50	N/A
Vinyl Chloride	8260	0.20	N/A
Other VOCs			
Methylene Chloride^	8260	N/A	9.60E+02
Tetrahydrofuran	8260	N/A	N/A
Toluene^	8260	N/A	4.50E+04
1,1,1-Trichloroethane^	8260	N/A	3.80E+04
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)^	8260	N/A	1.80E+05
TCLP SVOCs			
o-Cresol*	8270	200.0	N/A
m-Cresol*	8270	200.0	N/A
p-Cresol*	8270	200.0	N/A
Pyridine^	8270	5.0	1.00E+03
Hexachloroethane	8270	3.0	N/A
Nitrobenzene	8270	2.0	N/A
Hexachlorobutadiene	8270	0.50	N/A
2,4,6-Trichlorophenol	8270	2.0	N/A
2,4,5-Trichlorophenol	8270	400.0	N/A
2,4-Dinitrotoluene	8270	0.13	N/A
Hexachlorobenzene	8270	0.13	N/A
Pentachlorophenol	8270	100.0	N/A
Energetic Compounds			
HMX	8330	Reactive	N/A
RDX	8330	Reactive	N/A
Nitroglycerine	8330	Reactive	N/A
Perchlorate	314, 8321A, 6850	Reactive	N/A
Characteristic Compounds			
pH	150.1	<2 &>12.5	N/A
Reactivity	N/A	Reactive	N/A

N/A= Not Applicable
* = If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol concentration is used.
^ = Listed RCRA Waste constituent potentially present in hazardous waste treated at the TTF
1. Site specific constituent list for waste characterization is derived from Tables 1 and 2 of Closure Plan.
2. Regulatory Limit for determining if listed waste is "contained in" environmental media of soil, sediment, or environmental debris, as defined in 40 CFR 268.2(g). Concentration values for listed waste constituents equivalent to industrial soil RSLs found on the EPA Region 3 Regional Screening Level Table: http://www.epa.gov/reg3hwmd/risk/human/. These values are subject to change and should be verified at time of closure. Listed values are applicable to soil waste generated for disposal.

Table 5

Monitoring Well Elevations and Screened Intervals

Aerojet - Orange County, VA

Well Designation	Top of Casing Elevation	Ground Surface Elevation	Elevation of Screened Interval	Location	Depth Class
OW-1A	439.03	436.56	377.06 – 382.06	Down-Gradient	4
OW-1B	439.94	436.94	370.44 – 375.44	Down-Gradient	5
MW-1A	445.24	443.28	408.28 – 413.28	Up-Gradient	2
MW-1B	445.27	443.29	398.29 – 403.29	Up-Gradient	3
MW-2A	410.76	407.85	385.85 – 390.85	Up-Gradient	1
MW-2B	410.23	407.55	375.55 – 380.55	Up-Gradient	2
MW-2C	410.49	407.36	365.36 – 370.36	Up-Gradient	3
MW-2D	409.58	407.24	355.24 - 360.24	Up-Gradient	4
MW-2E	410.17	407.14	345.14 – 350.14	Up-Gradient	5
MW-3A	432.97	429.71	382.71 – 387.71	Mid-Gradient	3
MW-3B	431.81	429.81	372.81 – 377.81	Mid-Gradient	4
MW-3C	432.94	429.70	362.70 – 367.70	Mid-Gradient	5
MW-4A	426.08	423.78	375.78 – 380.78	Down-Gradient	3
MW-4B	426.65	424.49	366.49 – 371.49	Down-Gradient	4
MW-4C	426.42	423.97	355.97 – 360.97	Down-Gradient	5
MW-5	429.97	426.97	371.47 – 376.47	Down-Gradient	4

- All elevations in feet, referenced to National Geodetic Vertical Datum

Depth Classes (to center of screened interval):

1) Less than 24 ft. below grade
2) 25-36 ft. below grade
3) 37-48 ft. below grade
4) 49-60 ft. below grade
5) More than 60 ft. below grade

Table 6
Closure Cost Estimate for RCRA Treatment (Open Burn) Units
Aerojet - Orange County, VA

Item	Activity	Cost
1)	Site preparation including constructing temporary decontamination	
	and staging areas, gathering decontamination equipment, etc.:	$25,000.00
	Total	**$25,000.00**
2)	Remove and dispose of treatment residues and pan lining material	
	PPE labor: 4 persons @ $35.00/hr x 40 hrs/wk x 1 wk:	$5,600.00
	Supervisor labor: 1 person @ $100.00/hr x 40 hrs/wk x 1 wk:	$4,000.00
	Equipment/supplies/expenses:	$2,000.00
	Waste characterization samples: 12 @ $1000/sample:	$12,000.00
	Hazardous waste solids disposal: 40 ton @ $265/ton	$10,600.00
	Total	**$34,200.00**
3)	Decontamination of equipment and structures	
	PPE labor: 4 persons @ $35.00/hr x 40 hrs/wk x 1 wk:	$5,600.00
	Technician labor: 1 person @ $75/hr at 40 hours:	$3,000.00
	Supervisor labor: 1 person @ $100.00/hr x 40 hrs/wk x 1 wk:	$4,000.00
	Decontamination equipment/supplies/expenses:	$2,000.00
	Waste characterization samples: 14 @ $1000/sample:	$14,000.00
	Decon water disposal: 2,000 gallon @ $2.50/gal	$5,000.00
	Total	**$33,600.00**
4)	Soil sampling and analysis	
	Technician labor: 1 person @ $75/hr at 40 hrs/wk x 1.5 wk:	$4,500.00
	Supervisor labor: 1 person @ $100.00/hr x 40 hrs/wk x 1.5 wk:	$6,000.00
	Driller/Rig:	$13,000.00
	Sampling equipment/supplies/expenses:	$1,000.00
	Decontamination equipment/supplies/expenses:	$500.00
	TTU-1,2,4 Samples: 216 @ $530/sample:	$114,480.00
	TTU-1,2,4 Dioxin/Furan samples: 12 @ $615/sample:	$7,380.00
	TTU-3 Samples: 60 @ $325/sample:	$19,500.00
	Background Samples: 30 @ $105/sample:	$3,150.00
	IDW waste sampling: 1 @ $1000/sample	$1,000.00
	IDW waste disposal: 2 drum @ $250/drum	$500.00
	Total	**$171,010.00**
5)	Groundwater sampling and analysis	
	Technician labor: 1 person @ $75/hr at 64 hours:	$4,800.00
	Supervisor labor: 1 person @ $100.00/hr x 64 hrs/wk x 1 wk:	$6,400.00
	Sampling equipment/supplies:	$4,000.00
	Decontamination equipment/supplies/expenses:	$500.00
	Samples: 44 @ $700/sample:	$30,800.00
	Potential monitoring well installation: 1 well @ $10,500/well	$10,500.00
	IDW waste sampling: 1 @ $1000/sample	$1,000.00
	IDW waste disposal: 6 drums @ $250/drum	$1,500.00
	Total	**$59,500.00**
6)	Contingent soil excavation and disposal	
	Technician labor: 3 person @ $75/hr at 40 hours:	$9,000.00
	Supervisor labor: 1 person @ $100.00/hr x 40 hrs/wk x 1 wk:	$4,000.00
	Excavation equipment/supplies/expenses:	$10,000.00
	Post-Excavation samples: 25 @ $350/sample:	$8,750.00
	Waste characterization samples: 6 @ $1000/sample:	$6,000.00
	Hazardous waste soil disposal (approx. 1150 ton @ $265/ton):	$304,750.00
	Total	**$342,500.00**
7)	Sampling data evaluation during closure	
	Soil evaluation (no reporting)	
	Supervisor labor: 1 person @ $100.00/hr x 40 hrs/wk x 3 wk:	$12,000.00
	Groundwater evaluation and reporting	
	Technician labor: 1 person @ $75.00/hr x 40 hrs/wk x 3 wk:	$9,000.00
	Supervisor labor: 1 person @ $100.00/hr x 36 hrs/wk x 3 wk:	$10,800.00
	Total	**$31,800.00**
8)	Site restoration	
		$25,000.00
	Total	**$25,000.00**
9)	Closure reports for soil and groundwater	
	Technician labor: 1 person @ $75/hr x 40 hrs/wk x 4 wks:	$12,000.00
	Supervisor labor: 1 person @ $100/hr x 40 hrs/wk x 4 wks:	$16,000.00
	Total	**$28,000.00**
10)	Closure certification by independent Virginia Professional Engineer	
	Professional Engineer @ $125/hr x 40 hrs/wk x 2 wks:	$10,000.00
	Total	**$10,000.00**
	Estimated Closure Costs:	**$760,610.00**
	10 percent Contingency:	**$76,061.00**
	Total	**$836,671.00**

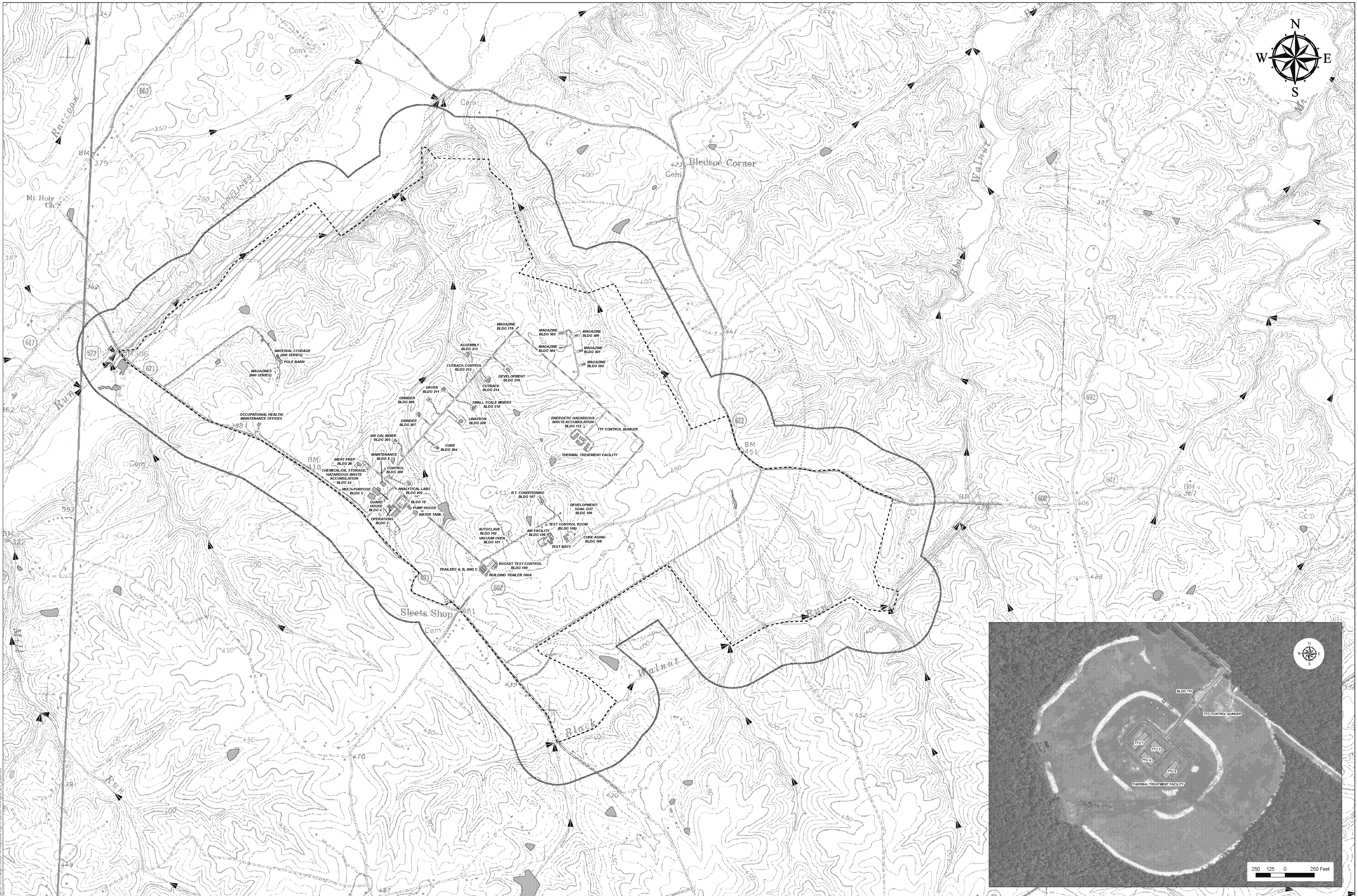
*Updated February 26, 2013

FIGURES

RCRA CLOSURE PLAN

THERMAL TREATMENT UNITS

ENVIRONMENTAL ALLIANCE



Legend

Facility Property Line	Building
1,000-Foot Facility Buffer	Road
Access Gate	100-Year Flood Plain
Surface Water Body	1-Mile Radius from Center of TTF
Stream	Surface Water Flow

0 1,400 2,800 4,200 Feet

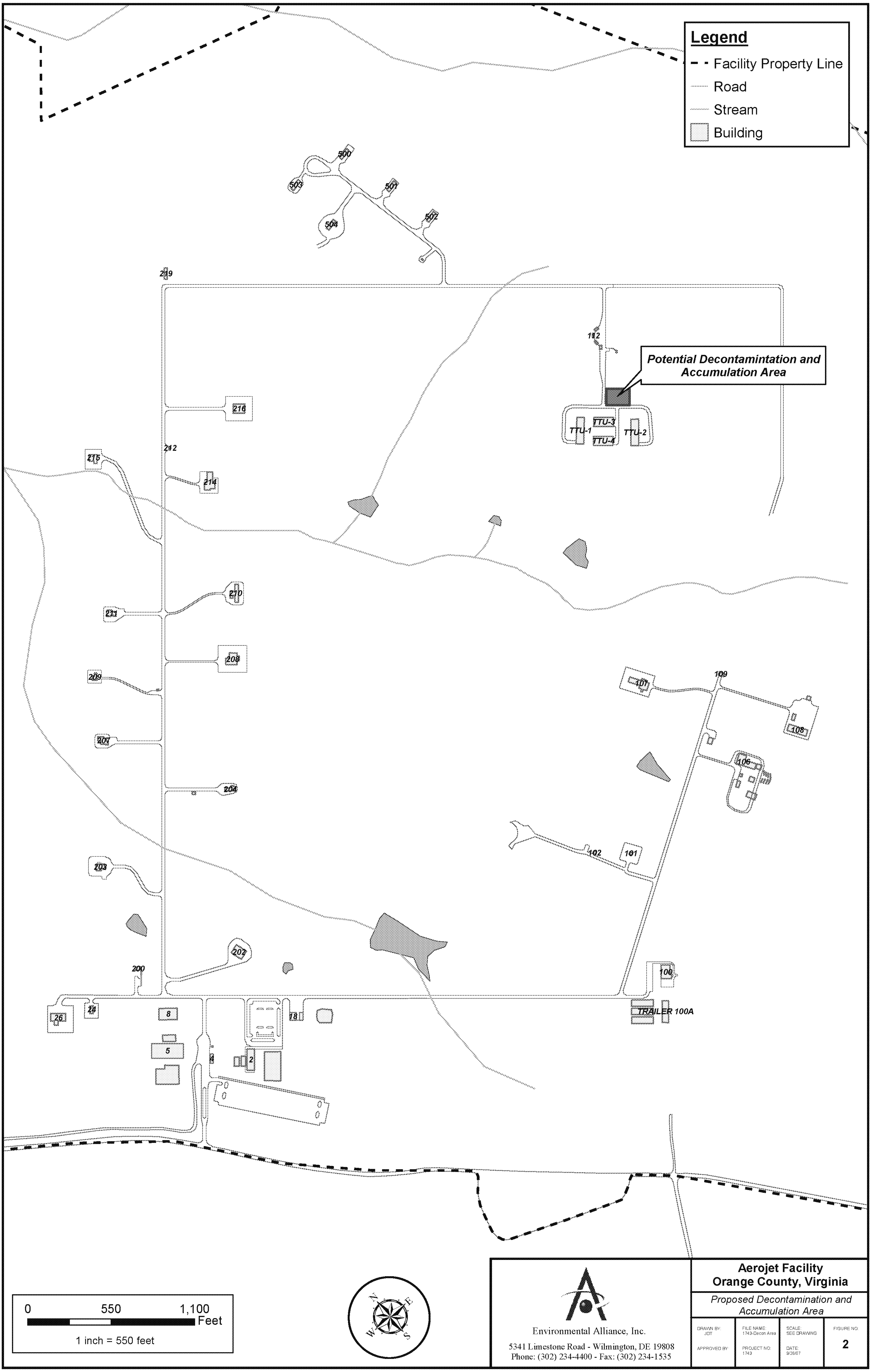
Sources:
- Unionville and Mine Run, VA USGS 7.5 Minute Topographic Quadrangles.
- Base map provided by Aerojet.
- Aerial Photography provided by Orange County, 2008.

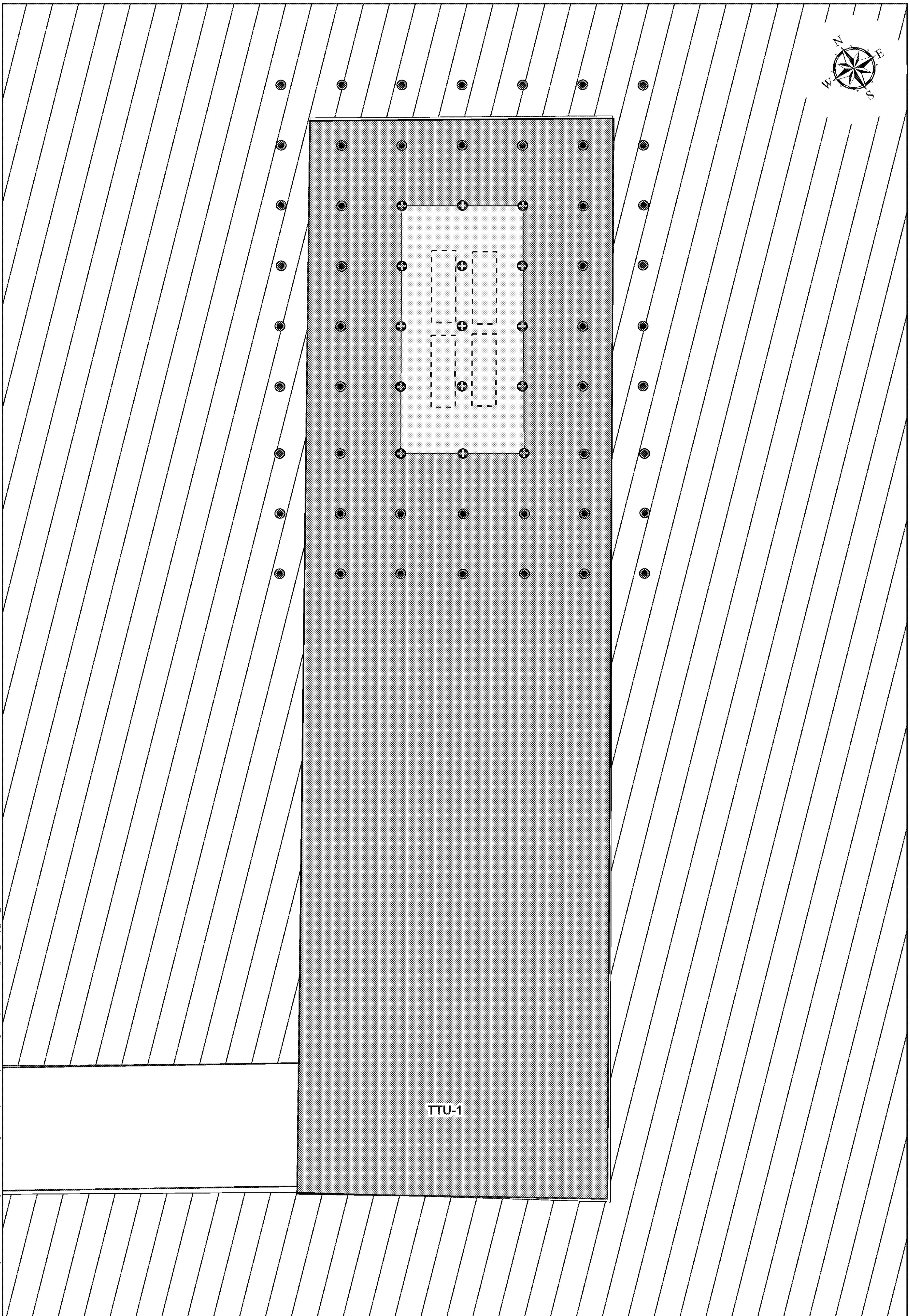
Environmental Alliance, Inc.
5341 Limestone Road - Wilmington, DE 19808
Phone: (302) 234-4400 - Fax: (302) 234-1535

Aerojet Facility
Orange County, Virginia

USGS Topographic Map

DESIGNED BY:	DRAWN BY: JDT	UPDATED BY: AGG/LAV	FIGURE NO.:
APPROVED BY:	PROJECT NO.: 1743	DATE: 01/22/2010	1


Legend
Facility Property Line
Road
Stream
Building
Potential Decontamintation and Accumulation Area
500
503
501
504
502
219
112
216
TTU-3
TTU-1
TTU-4
TTU-2
215
212
214
210
211
208
209
207
204
203
202
200
26
24
8
5
4
2
18
107
109
108
106
102
101
100
TRAILER 100A
0
550
1,100
Feet
1 inch = 550 feet
N
E
S
W
Environmental Alliance, Inc.
5341 Limestone Road - Wilmington, DE 19808
Phone: (302) 234-4400 - Fax: (302) 234-1535
Aerojet Facility
Orange County, Virginia
Proposed Decontamination and Accumulation Area
FIGURE NO.
2



Legend

- Proposed Soil Sample Location for Initial Analysis
- Example Delineation Soil Sample Location
- Approximate Bermed Area
- Approximate Existing Burn Pan Location
- Proposed 20' x 40' Initial Sampling Area
- Thermal Treatment Unit (TTU) Floor

0 15 30 Feet

Source: Commonwealth of Virgina, 2008

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5341 Limestone Road - Wilmington, DE 19808
Phone: (302) 234-4400 - Fax: (302) 234-1535

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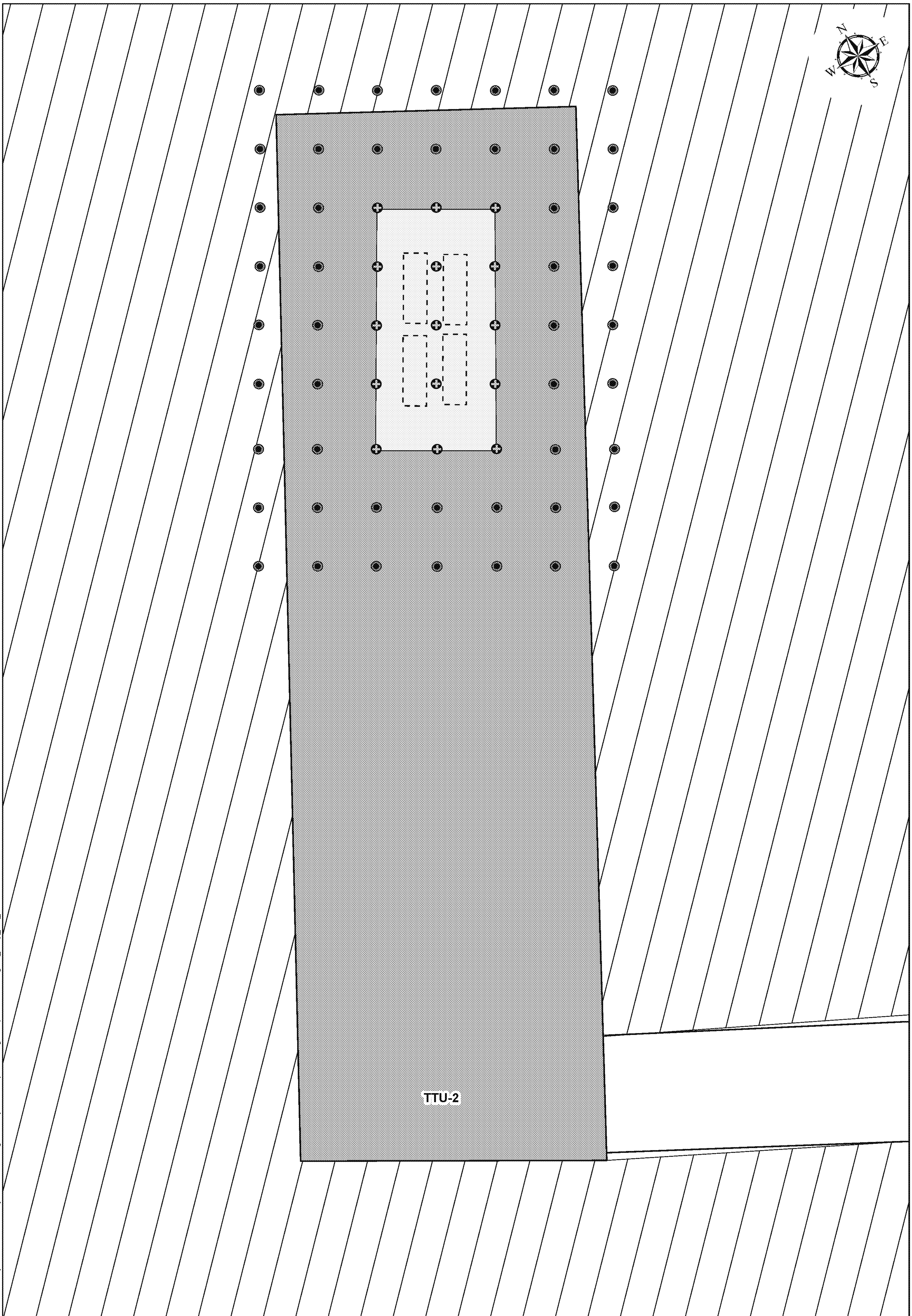
Orange County, Virginia

TTU-1 Closure Soil Sampling Locations

DESIGNED BY: DLM	DRAWN BY: AGG	UPDATED BY: SKJ	FIGURE NO.: 3
APPROVED BY:	PROJECT NO.: 1743	DATE: 08/18/2011	

Thursday, August 18, 2011 3:56:40 PM • G:\EAI Projects\Non-PCG Projects\1743-Orange County\1743-Maps\Rev Figs for part B\1743-Figure_Prop_Pts_TTU1.mxd



Legend

- Proposed Soil Sample Location for Initial Analysis
- Example Delineation Soil Sample Location
- Approximate Bermed Area
- Approximate Existing Burn Pan Location
- Proposed 20' x 40' Initial Sampling Area
- Thermal Treatment Unit (TTU) Floor

0 15 30 Feet

Source: Commonwealth of Virgina, 2008

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TTU-2 Closure Soil Sampling Locations

DESIGNED BY:	DRAWN BY:	UPDATED BY:	FIGURE NO.:
DLM	SKJ		4
APPROVED BY:	PROJECT NO.: 1743	DATE: 08/19/2011	

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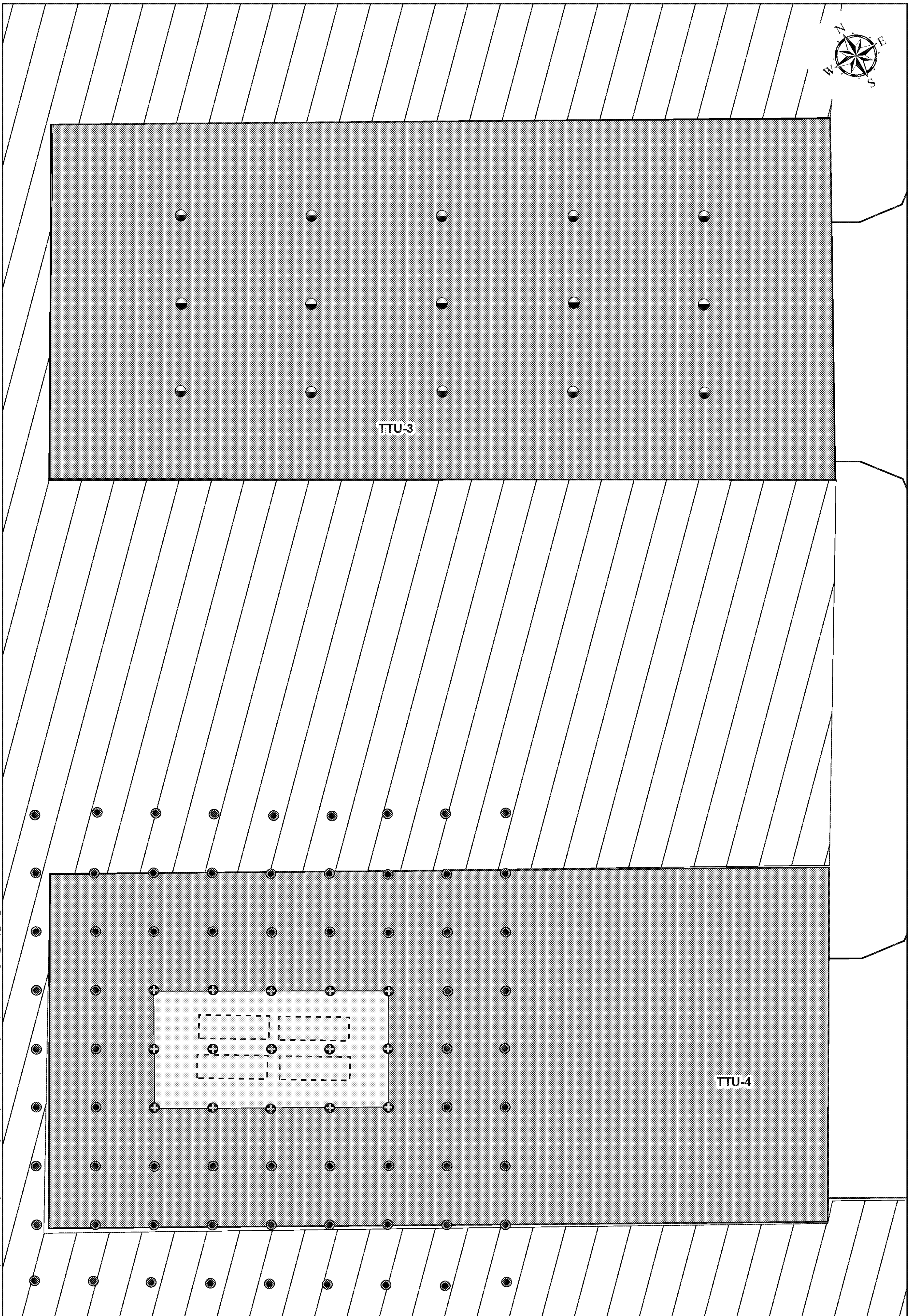

Legend

- Proposed Soil Sample Location for Initial Analysis
- Example Delineation Soil Sample Location
- TTU-3 Delination Sample Location
- Approximate Bermed Area
- Approximate Existing Burn Pan Location
- Proposed 20' x 40' Initial Sampling Area
- Thermal Treatment Unit (TTU) Floor

0 15 30 Feet

Source: Commonwealth of Virgina, 2008

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Aerojet Facility
Orange County, Virginia

TTU-3 and TTU-4 Closure
Soil Sampling Locations

DESIGNED BY: DLM	DRAWN BY: AGG	UPDATED BY: SKJ	FIGURE NO.: 5
APPROVED BY:	PROJECT NO.: 1743	DATE: 08/19/2011	

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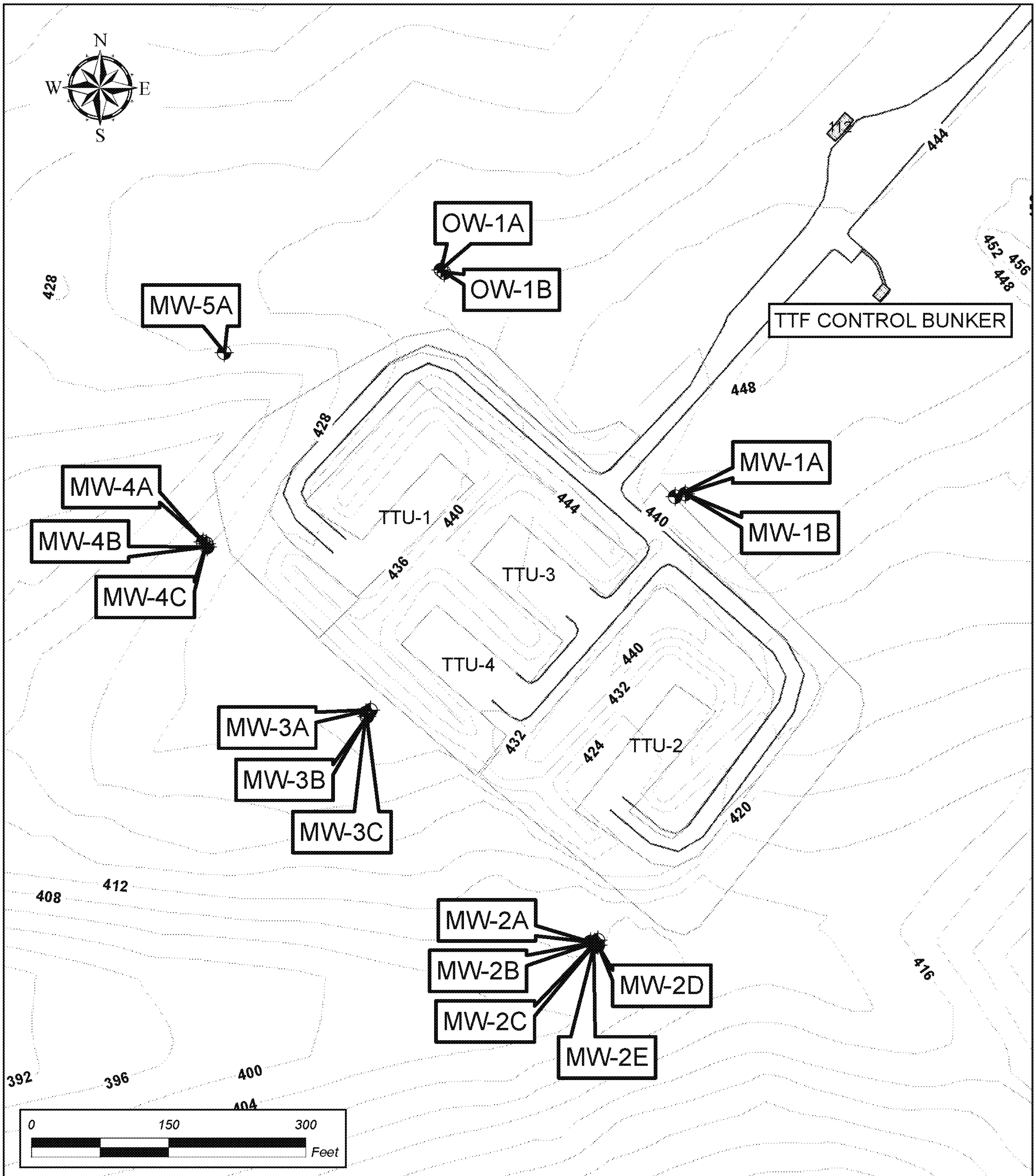

Legend

Monitoring Well

Topographic Elevation Contour

Source: Topographic contours obtained for Orange County, VA via www.Onlinegis.net/vaorange, 12/9/08

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Phone: (302) 234-4400 - Fax: (302) 234-1535

Aerojet Facility
Orange County, Virginia

Groundwater Monitoring Well Location Map

DESIGNED BY: JSE	DRAWN BY: SKJ	UPDATED BY: -- --	FIGURE NO.: 6
APPROVED BY:	PROJECT NO.: 1743	DATE: 08/19/2011	

Monday, August 22, 2011 10:31:41 AM • G:\EAI Projects\Non-PCG Projects\1743-Orange County\1743-Maps\1743-TTU_MW_Location_map.mxd

ATTACHMENT A

THERMAL TREATMENT FACILITY PHOTOGRAPHS

ENVIRONMENTAL ALLIANCE

Thermal Treatment Facility Field

Thermal Treatment Unit 1 (TTU-1)

Thermal Treatment Unit 2 (TTU-2)

Thermal Treatment Unit 3 (TTU-3)
Note: Not currently in use for thermal treatment; used for storage of sand and gravel

Thermal Treatment Unit 4 (TTU-4)

ATTACHMENT B

COMPOSITION OF PROPELLANTS

ENVIRONMENTAL ALLIANCE

ATTACHMENT B: COMPOSITION OF PROPELLANTS AEROJET - ORANGE COUNTY, VA			
Propellant	**Hazard Class**	**Ingredient**	**Percent Composition Formulation by Weight (%)**
I. PRODUCTION PROPELLANTS			
ARCADENE 311G	1.1	Cyclotetramethylene tetranitramine (HMX) Hydroxy-terminated polybutadiene (R45-M) Isophorone diisocyanate (IPDI) Carbon black	80 - 90 12 - 16 0.1 - 2 0.01 - 0.1
ARCADENE 458/458A	1.3	Ammonium perchlorate (AP) R45M polymer Dimeryl diisocyanate (DDI) Copper chromite	75 - 85 10 - 16 2 - 5 0.1 - 1
ARCITE 386M	1.3	Ammonium perchlorate (AP) Aluminum powder Polyvinyl chloride (PVC) resin Dioctyl adipate (DOA) plasticizer Graphite or Thermax (Carbon black)British detergent* Magnesium oxide Copper chromite BC-100S Barium/cadmium salt complex (heat stabilizer)	60 - 85 1 - 25 8 - 15 8 - 12 0.01 - 0.1 0.1 - 0.4 0.01 - 0.1 0.1 - 1 0.1 - 1.5
ARCITE 479	1.3	Ammonium Perchlorate Polyvinyl Chloride (PVC) Copper Chromite Polymers/Binders/Stabilizers (e.g., DOA)	70 - 80 15 - 20 1 - 2 10 - 15

ATTACHMENT B: COMPOSITION OF PROPELLANTS AEROJET - ORANGE COUNTY, VA			
Propellant	**Hazard Class**	**Ingredient**	**Percent Composition Formulation by Weight (%)**
II. OTHER PRODUCTION / DEVELOPMENT PROPELLANTS			
ARCAIR 102A (air bag)	1.1 Powder 1.3 Pressed pellets	Ammonium nitrate Guanidine nitrate Potassium nitrate Polyvinyl alcohol Silica aerogel Powdered graphite	45 - 65 20 - 40 2 - 10 2 - 10 < 1 < 1
ARCAIR102H (air bag)	1.1 Powder 1.3 Pressed pellets	Ammonium nitrate Guanidine nitrate Potassium perchlorate Polyvinyl alcohol Graphite Copper phthalocyanine	50 - 65 20 - 40 5 - 15 2 - 10 < 1 < 2
ARCADENE 228G	1.3	Ammonium perchlorate (AP) Aluminum powder Carboxy-terminated polymer/binder (HC 434) Dioctyl adipate (DOA) DER 331 Epoxy resin Iron oxide Chromium octoate	65 - 75 15 - 20 10 - 15 0.1 - 2 0.1 - 1 0.1 - 1 0.01 - 0.05
ARCADENE 358	1.3	Ammonium perchlorate Hydroxy-terminated 1,3-butadiene homopolymer Isophorone diisocyante (IPDI) Triphenyl bismuth Aluminum powder N-hexyl carborane	65 - 75 5 - 15 0.5 - 2 0.01 - 0.1 15 - 20 0.1 - 7
ARCADENE 360B	1.3	Ammonium perchlorate (AP) Aluminum powder Hydroxy-terminated polybutadiene Dioctyl adipate (DOA) Iron oxide Isophorone diisocyanate (IPDI) Triphenyl bismuth (TPB)	65 - 75 15 - 25 6 - 12 1 - 4 0.5 - 2 < 1 0.001 - 0.01
ARCADENE 361	1.3	Ammonium perchlorate (AP) Hydroxy-terminated polybutadiene Isophorone diisocyanate (IPDI) Tetraethylene pentamine diacrylonitrile (Tepan) Dioctyl adipate (DOA) Aluminum powder Maleic anhydride (MA)	65 - 75 8 - 12 8 - 12 < 0.5 1 - 4 15 - 25 0.01 - 0.1
ARCADENE 407A	1.3	Dioctyl adipate (DOA) Iron oxide Graphite R-45HT (Hydroxy-terminated polybutadiene polymer - binder) TEPAN Zirconium carbide Ammonium perchlorate Isophorone diisocyanate (IPDI)	1 - 4 < 1 < 2 8 - 12 < 0.5 < 2 80 - 90 8 - 12

ATTACHMENT B: COMPOSITION OF PROPELLANTS AEROJET - ORANGE COUNTY, VA			
Propellant	**Hazard Class**	**Ingredient**	**Percent Composition Formulation by Weight (%)**
II. OTHER PRODUCTION / DEVELOPMENT PROPELLANTS			
ARCADENE 414B	1.3	R-45HT (Hydroxy-terminated polybutadiene polymer – binder) Dimeryl diisocyanate (DDI) Ammonium perchlorate (AP) Oxamide Tetraethylene pentamine acrylonitrile (Tepan) Dioctyl adipate (DOA) Zirconium carbide Graphite	6 - 10 6 - 10 65 - 80 10 - 15 < 0.5 1 - 4 < 2 < 1
ARCADENE 422B/C	1.3	R-45HT (Hydroxy-terminated polybutadiene polymer - binder) Isophorone diisocyanate (IPDI) Ammonium perchlorate (AP) Tetraethylene pentamine acrylonitrile (Tepan) Di-(2-ethylhexyl) adipate (DOA) Iron oxide Graphite Zirconium carbide	9 - 13 9 - 13 80 - 87 < 0.5 1 - 3 < 0.5 < 0.5 < 1
ARCADENE 428F/428I/428J	1.3	Ammonium perchlorate (AP) Boron Magnesium oxide, magnesium Maleic anhydride R45M Hydroxy-terminated polybutadiene (polymer) Polystryene Triphenyl bismuth (TPB) Tetraethylene pentamine acrylonitrile glycidol (Tepanol) Isophorone diisocyanate (IPDI) Iron oxide Carbon black CFX (Fluorinated Carbon - stabilizer)	30 - 40 1.0 - 5 0.01 - 0.1 0.01 - 0.1 10 - 15 30 - 40 0.01 - 0.1 0.01 - 0.1 < 1 0.1 - 2 < 1 < 1
ARCADENE 430B	1.3	R45HT/MAO III Hydroxy-terminated polybutadiene Dioctyl adipate (DOA) Tetraethylene pentamine acrylonitrile (Tepan) Iron oxide Ammonium perchlorate (AP) MDX 65 aluminum Triphenyl bismuth Maleic anhydride Dimeryl diisocyanate (DDI)	U.S. GOVERNMENT CLASSIFIED
ARCADENE 431D	1.3	R45HT/MAO III Hydroxy-terminated polybutadiene Dioctyl adipate (DOA) Tetraethylene pentamine acrylonitrile (Tepan) Zirconium carbide Flake graphite Oxamide H30 aluminum Ammonium perchlorate (AP) Triphenyl bismuth Maleic anhydride Magnesium oxide (MAO) Dimeryl diisocyanate (DDI)	U.S. GOVERNMENT CLASSIFIED

ATTACHMENT B: COMPOSITION OF PROPELLANTS AEROJET - ORANGE COUNTY, VA			
Propellant	**Hazard Class**	**Ingredient**	**Percent Composition Formulation by Weight (%)**
II. OTHER PRODUCTION / DEVELOPMENT PROPELLANTS			
ARCADENE 437	1.3	R45HT Hydroxy-terminated polybutadiene/Isophorone diisocyanate (IPDI) (binder)	8 - 12
		Ammonium perchlorate (AP)	66 - 70
		Aluminum powder	16 - 20
		Iron oxide	< 3
		Di-(2-ethylhexyl) adipate (DOA)	1 - 4
		Tetraethylene pentamine acrylonitrile glycidol (Tepanol)	< 0.5
		Octadecyl isocyanate (ODI)	< 0.2
ARCADENE 439	1.3	Ammonium perchlorate (AP)	70 - 80
		Aluminum powder	10 - 15
		Hydroxy-terminated polybutadiene (R45-HT) binder	10 - 15
		Dioctyl adipate (DOA)	1 - 5
		Iron oxide	0.1 - 1
		Tetraethylene pentamine acrylonitrile glycidol (Tepanol)	0.1 - 0.5
		Magnesium oxide	0.01 - 0.1
		Triphenyl bismuth (TPB)	0.01 - 0.1
		Maleic anhydride	0.01 - 0.1
		Isophorone diisocyanate (IPDI)	0.1 - 1
		Octadecyl isocyanate (ODI)	0.01 - 0.1
ARCADENE 441 / 442	1.3	2,2'-Bis (Ethylferrocenyl Propane)	U.S. GOVERNMENT CLASSIFIED
		2,2'-Methylene-bis(4-methyl-6-T-butylphenol)	
		Octadecyl isocyanate (ODI)	
		Polyurethane binder system	
		Ammonium perchlorate (AP)	
		Tetraethylene pentamine acrylonitrile glycidol (Tepanol)	
		Aluminum powder	
		Triphenyl bismuth	
		Di (2-ethylhexyl) adipate (DOA)	
		Isophorone diisocyanate (IPDI)	
		Cyclotetramethylene tetranitramine (HMX)	
ARCADENE 446	1.3	Ammonium perchlorate (AP)	55 - 65
		Aluminum powder	15 - 20
		Oxamide	8 - 12
		Hydroxy-terminated polybutadiene	5 - 10
		Dimeryl diisocyanate (DDI)	1 - 4
		Dioctyl adipate (DOA)	1 - 4
ARCADENE 449	1.3	Aluminum powder	0.5 - 2
		R45-M	5 - 10
		Tetraethylene pentamine acrylonitrile glycidol (Tepanol)	< 1
		Dioctyl Adipate	1 - 5
		Ammonium Perchlorate	75 - 85
		Cyclotetramethylenetetranitramine (HMX)	2 - 5
		Dimeryl Diisocyanate (DDI)	1 - 3
		Maleic Anhydride	< 1
		Triphenyl Bismuth (TPB)	< 1

ATTACHMENT B: COMPOSITION OF PROPELLANTS AEROJET - ORANGE COUNTY, VA			
Propellant	**Hazard Class**	**Ingredient**	**Percent Composition Formulation by Weight (%)**
II. OTHER PRODUCTION / DEVELOPMENT PROPELLANTS			
ARCADENE 451/452A	1.3	Ammonium perchlorate (AP) Aluminum powder Hydroxy-terminated polybutadiene (R45-HT) binder Oxamide Iron oxide Triphenyl bismuth (TPB) Carbon black Maleic anhydride Isophorone diisocyanate (IPDI) Octadecyl isocyanate (ODI) Dioctyl adipate (DOA) Magnesium oxide	U.S. GOVERNMENT CLASSIFIED
ARCADENE 454A	1.3	Ammonium perchlorate (AP) Hydroxy-terminated polybutadiene (R45-M) binder Dioctyl adipate (DOA) Isophorone diisocyanate (IPDI) Iron oxide Magnesium oxide Octadecyl isocyanate (ODI) Tetraethylene pentamine acrylonitrile glycidol (Tepanol) Maleic anhydride Triphenyl bismuth (TPB) Carbon black	80 - 90 8 - 15 1 - 5 0.1 - 2 0.1 - 2 0.1 - 2 0.1 - 1 0.1 - 0.5 0.01 - 0.1 0.01 - 0.1 0.01 - 0.1
ARCADENE 455	1.3	Ammonium perchlorate (AP) Hydroxy-terminated polybutadiene (R45-M) binder Isophorone diisocyanate (IPDI) Butacene Dioctyl adipate (DOA) Zirconium carbide Flaked graphite	82 - 87 10 - 13 10 - 13 10 - 13 1 - 3 1 - 5 1 - 5
ARCADENE 459 (air bag)	1.3	R45-HT Hydroxy-terminated polybutadiene binder Isophorone diisocyanate (IPDI) Potassium perchlorate	10 - 13 10 - 13 80 - 90
ARCADENE 461	1.3	Ammonium perchlorate (AP) Hydroxy-terminated polybutadiene Dimeryl diisocyanate Dioctyl adipate (DOA) Zirconium carbide Cyclotrimethylene trinitramine (RDX)	U.S. GOVERNMENT CLASSIFIED
ARCADENE 464A/471/473 and RDS-439	1.3	Ammonium perchlorate (AP) Cyclotrimethylene trinitramine (RDX) Aluminum powder PBAN/EPON or HTPB/IPDI (binder) Dioctyl adipate (DOA) Iron oxide or Catacene (rate catalyst) Zirconium carbide Graphite	50 - 90 15 - 25 0 - 20 5 - 15 2 - 5 0.1 - 1 0.1 - 1 < 1

ATTACHMENT B: COMPOSITION OF PROPELLANTS AEROJET - ORANGE COUNTY, VA			
Propellant	**Hazard Class**	**Ingredient**	**Percent Composition Formulation by Weight (%)**
II. OTHER PRODUCTION / DEVELOPMENT PROPELLANTS			
ANB-3766	1.3	Ammonium perchlorate (AP) R45M Hydroxy-terminated polybutadiene/Isophorone diisocyanate (IPDI) (binder) Dioctyl adipate (DOA) Zirconium carbide Cyclotrimethylene trinitramine (RDX)	80 - 87 8 - 12 1 - 4 < 2 1 - 5
ARCITE 377A	1.3	Ammonium perchlorate (AP) BC-100S Barium/cadmium salt complex (heat stabilizer) Dioctyl adipate (DOA) Polyvinyl chloride (PVC) Thermax (Carbon black)	70 - 80 0.1 - 1 10 - 15 10 - 15 0.1 - 2
ARCITE 413A	1.3	Ammonium perchlorate (AP) Dioctyl adipate (DOA) Polyvinyl chloride (PVC) Thermolite-35 British Detergent* Carbon black	75 - 85 8 - 12 8 - 12 0.1 - 0.5 0.1 - 0.5 0.01 - 0.1
ARCITE 497L (air bag)	1.3	Potassium perchlorate Dioctyl adipate (DOA) Polyvinyl chloride (PVC) Lithium carbonate Wetting agent (SP10418) Organo Tin Stabilizer, Type I or II (SP10426) Carbon black (Thermax)	80 - 85 5 - 10 5 - 10 1 - 4 < 0.5 < 0.5 0.05
ARCOCEL 426	1.1	Cyclotetramethylene tetranitramine (HMX) Butanetriol trinitrate (BTTN)/Nitroglycerin (NG)(plasticizer) Nitrocellulose (NC) polyesters (binders) Hexamethylene-1,6-diisocyanate (HMDI) Lead citrate, Lead oxide, or Tin oxide (rate catalyst) Carbon (rate catalyst) Zirconium carbide (stabilizer)	U.S. GOVERNMENT CLASSIFIED
ARCOCEL 432	1.1	Cyclotetramethylene tetranitramine (HMX) Butanetriol trinitrate (BTTN)/Nitroglycerin (NG)(plasticizer) Nitrocellulose (NC) polyesters (binders) Lead citrate (rate catalyst) Carbon (rate catalyst) Zirconium carbide (stabilizer)	60 - 70 20 - 25 5 - 10 2 - 5 0.1 - 1 0.1 - 1
ARCOCEL 430A and Arcocel 430B	1.1	N-methyl-p-nitroaniline (MNA) Zirconium carbide Triphenyl bismuth (TPB) Hexamethylene-1,6-diisocyanate (HMDI) Hydroxyl-terminated polyester resin Carbon black Lead citrate trihydrate Nitrocellulose (NC) Polycaprolactone polymer 0240 2-Nitrodiphenylamine (2-NDPA) 4-Nitrodiphenylamine (4-NDPA) Cyclotrimethylene trinitramine (RDX) Nitroglycerin (NG) Butanetriol trinitrate (BTTN)	U.S. GOVERNMENT CLASSIFIED

ATTACHMENT B: COMPOSITION OF PROPELLANTS AEROJET - ORANGE COUNTY, VA			
Propellant	**Hazard Class**	**Ingredient**	**Percent Composition Formulation by Weight (%)**
II. OTHER PRODUCTION / DEVELOPMENT PROPELLANTS			
ARCOCEL 440B and AFD-3778	1.3	Diethyleneglycol dinitrate Butanetriol trinitrate (BTTN) N-methyl-p-nitroaniline (MNA) Nitrocellulose (NC) Lead/Copper-12-15 Ballistic modifier paste Aluminum powder Difunctional diisocyanate (N-3200)	15 - 20 45 - 55 2 - 5 20 - 30 2 - 5 < 1 1 - 5
97% ARCOCEL 440B and 3% M36	1.3	(See Arcocel 440B and M36/Javelin Propellant Ingredients)	
ARCOCEL 444	1.1	Butanetriol trinitrate (BTTN) Diethylene glycol dinitrate (DEGDN) Nitrocellulose (NC) Zirconium carbide N-methyl-p-nitroaniline (MNA) Carbon black Lead citrate N-3200 isocyanate	U.S. GOVERNMENT CLASSIFIED
ARCOCEL 445	1.1	Cyclotrimethylene trinitramine (RDX) Butanetriol trinitrate Nitrocellulose (NC) Diethylene glycol dinitrate (DEGDN) Lead salts/stabilizers/curatives	55 - 65 20 - 25 3 - 8 5 - 10 3 - 7
ARCOCEL 448A	1.3	Nitrocellulose, pelletized (PNC) Butanetriol trinitrate (BTTN) 5-Aminotetrazole (5-AT) N-methyl-p-nitroaniline (MNA) Triacetin (desensitizer) Carbon black	30 - 40 30 - 35 15 - 30 < 4 < 1 < 0.5
ARCOCEL 450A	1.3	Nitrocellulose, pelletized (PNC -binder) Butanetriol trinitrate (BTTN)(nitrate ester) Triacetin (desensitizer) Ammonium nitrate (oxidizer) 5-Aminotetrazole (oxidizer) N-methyl-p-nitroaniline (MNA - stabilizer) Carbon black (ballistic modifier)	25 - 45 30 - 40 5 - 15 10 - 20 1 - 10 1 - 5 < 1
ARCOCEL 453	1.3	Nitrocellulose, pelletized (PNC -binder) Butanetriol trinitrate (BTTN)(nitrate ester) Cyclotrimethylenetrinitramine (RDX) Triethyleneglycol dinitrate (TEGDN) 5-Aminotetrazole (oxidizer) 2-Nitrodiphenylamine (2-NDPA) Carbon black (ballistic modifier)	30 - 40 40 - 50 5 - 15 5 - 10 1 - 10 1 - 5 < 1
ARCOCEL 457	1.3	Ammonium nitrate (oxidizer) Butanetriol trinitrate (BTTN)/Nitroglycerin (NG)(plasticizer) Nitrocellulose (NC) polyesters (binders) Carbon flake/graphite (rate catalyst)	40 - 50 25 - 35 20 - 25 < 1

ATTACHMENT B: COMPOSITION OF PROPELLANTS
AEROJET - ORANGE COUNTY, VA

Propellant	Hazard Class	Ingredient	Percent Composition Formulation by Weight (%)
II. OTHER PRODUCTION / DEVELOPMENT PROPELLANTS			
G1P102/CP213 and G1P100-1	1.1	Nitroglycerin (NG)	U.S. GOVERNMENT CLASSIFIED
		Nitrocellulose (NC)	
		Cyclotrimethylenetrinitramine (RDX)	
		1,2,4-Butanetriol trinitrate (BTTN)	
		Lead citrate	
		N-methyl-p-nitroaniline (MNA)	
		2-Nitrodiphenylamine (NDPA)	
		Zirconium carbide	
G1P100 and G1P102	1.1	Nitrocellulose (NC)	45 - 55
		Nitroglycerin (NG)	35 - 45
		2-Nitrodiphenylamine (NDPA)	1 - 3
		Triacetin	< 1 - 5
		Carbon black	< 0.5
		Lead/Copper salts	4 - 7
		Candellila wax	0.1 - 0.5
		Aluminum powder	0.5 - 1.0
ARCOMP 408 (air bag)	1.1	Cyclotrimethylene trinitramine (RDX)	55 - 70
		Strontium nitrate	30 - 40
		Polyvinyl alcohol	1 - 5
ARCOMP 36A (air bag)	1.1	Polypropylene carbonate	5
		Lactose	25
		Potassium chlorate	70
TALI-44 (air bag)	1.1	Molybdenum	10 - 40
		Silver nitrate	10 - 40
		Guanadine nitrate	10 - 40
		Potassium nitrate	8 - 12
AFX-235	1.1	NG/BTTN Lacquer (see below)	1 - 60
		HMX	1 - 90
		N-methyl-p-nitroaniline (MNA)	0.5 - 2
		IPDI	0.1 - 2
		Triphenyl Bismuth (TPB)	< 1
NG/BTTN Lacquer	1.1	NG spirits	1 - 60
		BTTN	1 - 60
		Nitrocellulose	1 - 60
		RXL-640 lacquer	1 - 60
		R-18 Polyester resin	3 - 9
		Polycaprolactone	1 - 40
		2-Nitrodiphenylamine (2-NDPA)	1 - 10
AFX-757	1.3	Ammonium perchlorate (AP)	25 - 35
		Aluminum powder	30 - 35
		Cyclotrimethylenetrinitramine (RDX)	20 - 30
		1,3-Butadiene homopolymer, hydroxy-terminated binder (or Hydroxy-terminated polybutadiene (R45-HT) binder)	5 - 10
		Dioctyl adipate (DOA)	5 - 10
		IPDI	< 1
		Lecithin	< 1
		Ethyl 702	< 1

ATTACHMENT B: COMPOSITION OF PROPELLANTS AEROJET - ORANGE COUNTY, VA			
Propellant	**Hazard Class**	**Ingredient**	**Percent Composition Formulation by Weight (%)**
II. OTHER PRODUCTION / DEVELOPMENT PROPELLANTS			
ANB-3149-3 and ANP-3503	1.3	Ammonium perchlorate (AP) Aluminum powder Nitroguanidine (Guanidine nitrate) Carboxyterminated polybutadiene Polypropylene glycol 2-ethyl-1-1-hexanol phosphate Isodecyl pelargonate (IDP) Dimeryl Diisocyanate (DDI) 2,4-Toluene Diisocyanate (TDI) Bis-Neopentyl glycol-azelate 1-(2-Methyl aziridinyl) phospine oxide (MAPO) HX-877	U.S. GOVERNMENT CLASSIFIED
ANP-3146-1 and ANP-3196-1	1.3	Ammonium perchlorate (AP) Aluminum powder 1-Nitroguanidine (Guanidine nitrate) Bis-Neopentyl glycol-azelate Isodecyl pelargonate (IDP) Terathane ™, Poly-(1,4-butylene) glycol 1,2-Propanediol (polymer) with Ethyloxyrane Pluracol TP Polyether polyol 1,6-Hexamethylene Diisocyanate (HMDI)	U.S. GOVERNMENT CLASSIFIED
AXP-3767	1.3	Polyethylene Glycol PolyG 55-37 Hexamethyl Diisocyanate Cyclotrimethylenetrinitramine (RDX) N-methyl-p-nitroaniline (MNA) 2-Nitrodiphenylamine (NDPA) Butanetriol trinitrate (BTTN) Triacetin Nitrocellulose (NC) Tris(4-ethoxyphenyl)bismuth (TEPB)	U.S. GOVERNMENT CLASSIFIED
AXP-3793	1.1	NG/BTTN Lacquer RDX Ammonium perchlorate (AP) N-methyl-p-nitroaniline (MNA) Desmophen 1800 (R-18 polyester resin) Oxamide HMDI Triacetin Triphenyl bismuth (TPB)	35 - 40 40 - 50 0 - 3 0.5 - 2 3 - 9 0 - 6 1 - 5 0 - 6 0 - 0.1
M36	1.3 Powder 1.3 Casting	Nitroglycerin (NG) Nitrocellulose (NC) Copper-Lead resorcylate salicyclate compound 2-Nitrodiphenylamine (NDPA) Di-n-propyl adipate Candelilla wax	35 - 45 45 - 55 4 - 7 1 - 3 1 - 4 0.1 - 0.5

ATTACHMENT B: COMPOSITION OF PROPELLANTS AEROJET - ORANGE COUNTY, VA			
Propellant	**Hazard Class**	**Ingredient**	**Percent Composition Formulation by Weight (%)**
II. OTHER PRODUCTION / DEVELOPMENT PROPELLANTS			
UTP-24745D	1.3	Ammonium Perchlorate (AP) Aluminum powder R45M polymer w/ AO2246 antioxidant Tetraethylene pentamine acrylonitrile glycidol (Tepanol - bonding agent) Isodecyl pelargonate (IDP) – plasticizer Protech – additional antioxidant Iron oxide Octadecyl Isocyanate (ODI) Isophorone diisocyanate (IPDI) Triphenyl bismuth (TPB)	U.S. GOVERNMENT CLASSIFIED
PBXN-107	1.1	Cyclotrimethylenetrinitramine (RDX) Binder, consisting of: 2-Ethylhexyl acrylate n-Vinyl-2-pyrrolidone Dioctyl maleate Triethylene glycol dimethacrylate Silica Cobaltous acetylacetonate t-Butyl perbenzoate t-Butyl pyrocatechol	80 - 90 10 - 20 30 - 50 20 - 30 20 - 40 < 1 1 - 10 < 1 0.1 - 2 < 1
PBXN-109	1.1	Cyclotrimethylenetrinitramine (RDX) Aluminum powder R45HT polymer Dioctyl Adipate (DOA) Isophorone diisocyante (IPDI) AO2246 (antioxidant) Dantocol DHE (Hydantoin bonding agent) Triphenyl Bismuth (TPB) Ethyl 702 Tetraethylene pentamine acrylonitrile glycidol (Tepanol) Iron Acetylacetonate (FeAA)	50 - 75 15 - 30 5 - 10 5 - 10 1 - 5 < 1 < 1 < 1 < 1 < 1 < 0.1
PBXN-110	1.1	HMX, Grade B, Class 3 HMX, Grade B, Class 2 Polybutadiene, linear, hydroxyl-terminated Isodecyl pelargonate 4,4-Methylene bis (2,6-di-tert-butylphenol) Lecithin Polymethylene polyphenylisocyanate Isophorone diisocyante (IPDI) Dibutyltin dilaurate Perric acetylacetonate Dibutyltin sulfide	50 - 70 30 - 60 5 - 10 5 - 10 < 1 < 1 < 1 0 - 7 0 - 0.01 0 - 0.0015 0 - 0.1
PBXN-112	1.1	Cyclotetramethylene tetranitramine (HMX) R45HT Hydroxy-terminated polybutadiene Isodecyl pelargonate (IDP – plasticizer) Isophorone diisocyante (IPDI) Lecithin Ethyl 702	85 - 95 2 - 10 1 - 5 < 1 < 1 < 1

ATTACHMENT B: COMPOSITION OF PROPELLANTS AEROJET - ORANGE COUNTY, VA			
Propellant	**Hazard Class**	**Ingredient**	**Percent Composition Formulation by Weight (%)**
II. OTHER PRODUCTION / DEVELOPMENT PROPELLANTS			
AAO-3781	1.3	Guanidine nitrate (GN) Potassium nitrate (KN) Iron Oxide, Superfine Copper Oxalate (CuOx)	40 - 60 20 - 40 0 - 2 0 - 20
ADM-0101	1.3	AP Aluminum RDX DOA R45M Polymer DDI TEPAN Zirconium Carbide	70 - 85 0 - 2 0 - 10 2 - 5 5 - 10 1 - 3 0 - 0.3 0 - 2
ADM-C23523 and ADM-C23604	1.1	Aluminum Isododecylpelargonate (IDP) Lecithen, B-70 Polymer, R45HT AP RDX/HMX Boron IPDI TPB	15 - 50 5 - 10 0 - 2 2 - 8 0 - 5 30 - 40 0 - 30 0 - 2 0 - 0.1
Pro 75 and Pro 98	1.3	Ammonium perchlorate (AP) Aluminum or Magnesium powder Iron oxide Synthetic rubber	65 - 80 0 -15 0 - 2 10 - 30

ATTACHMENT B: COMPOSITION OF PROPELLANTS
AEROJET - ORANGE COUNTY, VA

Propellant	Hazard Class	Ingredient	Percent Composition Formulation by Weight (%)
III. RESEARCH AND DEVELOPMENT (R&D) PROPELLANTS			
AerGen	1.1 Powder	Tetrabutylammonium perchlorate (TBAP)	5 - 35
		Ammonium perchlorate	5 - 35
		Tetraethylammonium borohydride	60 - 70
		Carbon black	0.1 - 3
		Iron oxide	0.1 - 2
		Tetramethylammonium nitrate	5 - 50
		Polyethylene	1 - 10
AerGen 483-30	1.1 Powder	Lithium nitrate	25 - 35
		Tetraethylammonium borohydride (TEABH)	60 - 70
		Tetrabutylammonium borohydride (TBABH)	1 - 10
		Carbon black	0.1 - 3
DNTF Family	1.1	Nitrofurazanyl-bis-furoxan (DNTF)	0 - 40
		Butanetriol trinitrate (BTTN)	25 - 30
		Ammonium nitrate (AN)	0 - 50
		Nitrocellulose (NC)	20 - 25
		Diethylene glycol dinitrate (DEGDN)	5 - 10
		N-methyl-p-nitroaniline (MNA)	2
		Lead citrate	2
PNO Family	1.1	Polynitrato oxetane polymer (PNO)	5 - 25
		Butanetriol trinitrate (BTTN)	
		Nitrocellulose (NC)	10 - 30
		Diethylene glycol dinitrate (DEGDN)	20 - 34
		N-methyl-p-nitroaniline (MNA)	5 - 15
		Lead citrate	1 - 2
		Cyclotrimethylene trinitramine (RDX)	3 - 5
		Aluminum	8 - 10
		Hexamethyl diisocyanate (HMDI)	0.5
			0.5
Classified Gas Generator Family	1.1	Nitrocellulose	0 - 10
		Glycidyl azide polymer (GAP)	0 - 23
		Ammonium nitrate	0 - 25
		Difunctional isocyanate curative	2 - 3
		Metal fuel from one of these candidates:	15 - 70
		Aluminum oxide	
		Calcium oxide	
		Zinc oxide	
		Barium nitrate	
		Barium aluminum alloy	
		Magnesium aluminum alloy	
		Lithium aluminum alloy	

ATTACHMENT B: COMPOSITION OF PROPELLANTS AEROJET - ORANGE COUNTY, VA			
Propellant	**Hazard Class**	**Ingredient**	**Percent Composition Formulation by Weight (%)**
III. RESEARCH AND DEVELOPMENT (R&D) PROPELLANTS			
R&D Miscellaneous Propellant Ingredients: General Listing of Ingredients (including air bag)	Propellants containing any combination of these ingredients may be HC 1.1 or 1.3.	Ammonium, lithium, magnesium, or potassium perchlorate	50 - 90
		Ammonium sulfate	5 - 50
		Ammonium, Guanidine, or Triaminoguanidine nitrate	5 - 50
		Barium, lithium, potassium, strontium or silver nitrate	10 - 50
		Butacene	5 - 15
		Cyclotetramethylenetetranitramine (HMX)	10 - 90
		Cyclotrimethylenetrinitramine (RDX)	20 - 90
		Potassium chlorate	50 - 90
		Azodiformamidine dinitrate (AZODN)	50 - 75
		Diammonium tetranitrate	5 - 50
		Nitroguanidine	5 - 50
		Nitramines (HMX, RDX, CL-20)	1 - 90
		Ammonium dinitramide	1 - 90
		Aluminum powder or aluminum oxide	0.5 - 30
		Tetrabutylammonium perchlorate (TBAP)	5 - 35
		Tetrarthylammonium perchlorate	5 - 35
		(TEAP)Tetraethylammonium borohydride (TEABH)	60 - 70
		Tetrabutylammonium borohydride (TBABH)	1 - 10
		Tetramethylammonium nitrate	10 - 50
		Boron, brass, copper, tungsten, titanium, zinc, zirconium, hafnium or magnesium powders	1 - 10
		Lead citrate, lead oxide, lead salicylate, lead-copper chelate	1 - 6
		Barium/cadmium salts	0.1 - 1.5
		Bismuth subsalicylate, oxide, or trioxide	0.01 - 6
		Copper chromite	0.05 - 6
		Metal oxide salts such as antimony oxide, tin oxide, titanium oxide/dioxide, zinc oxide	0.5 - 6
		Strontium titanate	0.5 - 6
		Titanium boride	0.5 - 6
		Triphenyl bismuth and dibutyltin dilaurate	0.01 - 0.1
		Hydrogen peroxide	40 - 60
		Nitric acid	40 - 60
		Iron or magnesium oxide or other iron compounds	0.1 - 2
		Zirconium carbide	0.1 - 2
		Carbon black, graphite, or other forms of carbon powder	0.01 - 1
		Maleic anhydride	0.01 - 0.1
		Triacetin	1 - 10
		Lecithen	0.05 - 1
		Oxamide	0.05 - 5
		Polyether/polyester resins (e.g., polyethylene glycol (PEG), R18)	5 - 40
		Epoxy resins (e.g., EPON: 4,4-Isopropylidenediphenol-Epichlorohydrin copolymer; curative)	0.1 - 5
		Isocyanates (e.g., isophorone-, toluene-, octadecyl-, dimeryl-, hexamethylene-); Adiprene (contains TDI)	1 - 25
		Cyclodextrin nitrate	0.5 - 30
		Furazans	0.5 - 15

ATTACHMENT B: COMPOSITION OF PROPELLANTS AEROJET - ORANGE COUNTY, VA			
Propellant	**Hazard Class**	**Ingredient**	**Percent Composition Formulation by Weight (%)**
III. RESEARCH AND DEVELOPMENT (R&D) PROPELLANTS			
R&D Miscellaneous Propellants: General Listing of Ingredients (including air bag) (continued)		Triazoles (e.g., Nitratoethyl nitrotriazole, Azidoethyl nitrotriazole Carboranes Glycidal ethers Binders** Organic plasticizers***	0.5 - 6 5 - 40 1 - 20 1 - 40 1 - 60

* British Detergent is composed of an equal blend of the following three compounds: (1) Pentaerythritol dioleate, (2) Dioctyl sodium sulfo-succinate (Aerosol OT 100%), (3) Glycerol monooleate

** Binder types include: Hydroxy- and Carboxy-terminated polybutadienes, Polybutadiene acrylic acid acrylonitrile copolymer (PBAN), Polybutadiene acrylic acid copolymer (PBAA), PVC, Polyester, Nitrocellulose (NC), Polycaprolactone, Glycidal azide polymer (GAP), polynitrato oxetane.

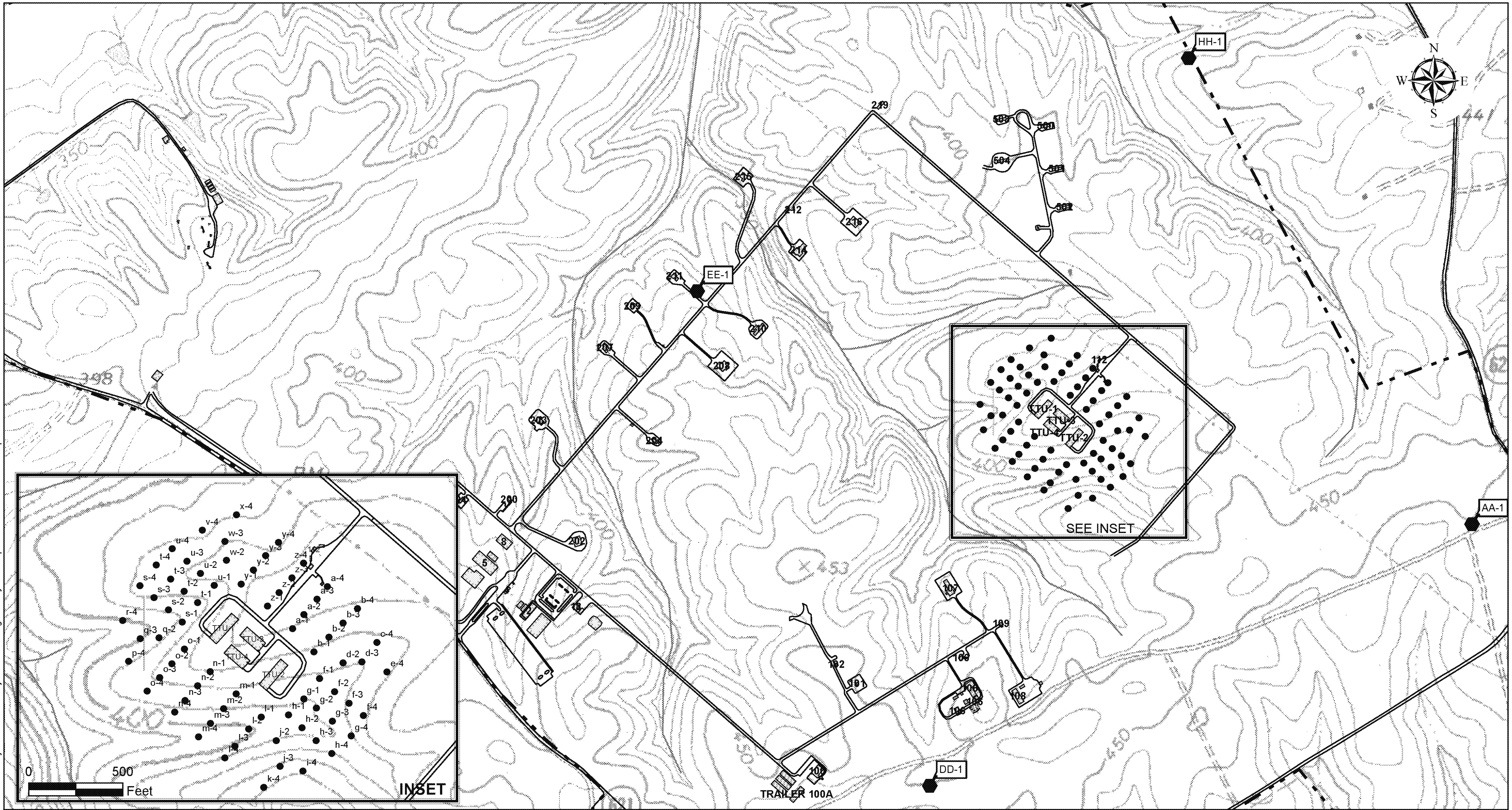
*** Plasticizer types (both inert and energetic) include: Dioctyl adipate (DOA), Dodecenyl succinic anhydride (DOS), Dioctyl sebacate (DOS), Dioctyl maleate (DOM), Dioctyl phthalate (DOP), Isodecyl pelargonate (IDP), Nitroglycerin (NG), 1,2,4 (or 1,2,3)-Butanetriol trinitrate (BTTN), Diethyleneglycol dinitrate (DEGDN), Triethyleneglycol dinitrate (TEGDN), Napthenic plasticizers, GAP plasticizer.

Rev - 5/18/11

ATTACHMENT C

HISTORICAL SOIL MONITORING DATA 2006 - 2010

(Electronic Format Only – Refer to Attached Disc)



Legend

•	Soil Monitoring	— · · —	Property Line	———	Stream
⬢	Soil-Remote	———	Road	▒	Building

0 800 1,600 Feet

Source: USGS Topographic Map, Unionville Quad, 1983

Environmental Alliance, Inc.
5341 Limestone Road, Wilmington, DE 19808
Phone: (302) 234-4400 - Fax: (302)234-1535

Aerojet Facility
Orange County, Virginia

Historical Soil Sample Location Map

DESIGNED BY: DLM	DRAWN BY: SKJ	UPDATED BY: -- --	FIGURE NO.: XX
APPROVED BY:	PROJECT NO.: 1743	DATE: 08/19/2011	

Monday, August 22, 2011 11:01:35 AM • G:\EA\ Projects\Non-PCG Projects\1743-Orange County\1743-Maps\1743-Historical SS Loc Map.mxd

ED_001691B_00019876

July 2006
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**	
Sample Time			**6:45**		**13:15**		**7:00**		**7:15**		**7:30**		**13:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	17.8	5.61	10.8	6.45	11.4	5.78	20.6	5.73	16.6	6.22	45.2	6.54
Ammonia, Extractable	350.1	mg/kg	1.83	1.14	2.18	1.31	3.83	1.19	6.84	1.2	2.7	1.25	3.35	1.33
Aluminum	6010B	mg/kg	< 3.43	3.43	54.4	3.93	< 3.58	3.58	< 3.59	3.59	< 3.75	3.75	79.1	4
Chromium	6010B	mg/kg	18.1	2.38	33.9	2.91	13.8	2.49	9.13	2.6	22.1	2.57	14.3	2.9
Lead	6010B	mg/kg	9.79	0.794	13.4	0.969	9.00	0.831	13.9	0.868	14.9	0.856	13.3	0.966
pH	9045D	SU	5.87	--	4.61	--	5.99	--	5.47	--	5.15	--	4.74	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**	
Sample Time			**13:00**		**7:45**		**8:00**		**8:05**		**8:15**		**8:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.84	5.84	39.3	6.3	17.1	5.66	18.5	6.23	15	5.68	7.06	5.15
Ammonia, Extractable	350.1	mg/kg	< 1.17	1.17	7.54	1.29	1.79	1.18	1.69	1.29	3.16	1.16	1.43	1.07
Aluminum	6010B	mg/kg	319	3.51	< 3.88	3.88	< 3.54	3.54	< 3.86	3.86	< 3.47	3.47	< 3.21	3.21
Chromium	6010B	mg/kg	22.4	2.61	18.1	2.87	25.4	2.62	37.6	2.88	18.2	2.52	22.2	2.39
Lead	6010B	mg/kg	14.8	0.869	9.41	0.957	12.1	0.874	16.4	0.96	11.9	0.84	8.83	0.797
pH	9045D	SU	4.62	--	5.29	--	5.8	--	5.7	--	6.07	--	5.58	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**	
Sample Time			**12:45**		**8:45**		**9:00**		**9:15**		**9:30**		**9:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	18.9	5.88	26.4	6.31	19.4	6.14	23.1	6.04	21.1	5.53	13.9	5.4
Ammonia, Extractable	350.1	mg/kg	3.67	1.22	7.93	1.32	1.78	1.26	3.52	1.26	2.71	1.13	3.17	1.11
Aluminum	6010B	mg/kg	89.6	3.65	< 3.96	3.96	< 3.78	3.78	< 3.79	3.79	< 3.39	3.39	< 3.34	3.34
Chromium	6010B	mg/kg	14.4	2.71	10.9	2.94	79.1	5.5	24.1	2.53	19.8	2.41	21	2.47
Lead	6010B	mg/kg	11	0.902	11.6	0.979	25.8	1.83	14.1	0.844	14.2	0.803	12.2	0.825
pH	9045D	SU	4.79	--	5.89	--	5.02	--	5.64	--	5.59	--	6.1	--

July 2006
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**	
Sample Time			**10:00**		**10:15**		**10:30**		**10:45**		**11:00**		**11:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	15.2	5.73	18.2	6.52	12.3	5.69	18	5.99	13.8	5.58	18.5	5.73
Ammonia, Extractable	350.1	mg/kg	1.86	1.16	6.15	1.32	2.53	1.19	3.75	1.24	2.54	1.16	2.63	1.19
Aluminum	6010B	mg/kg	< 3.48	3.48	< 3.97	3.97	< 3.56	3.56	< 3.73	3.73	< 3.48	3.48	< 3.56	3.56
Chromium	6010B	mg/kg	22.6	2.58	20.4	2.94	14.4	2.61	27.5	2.77	26.8	2.52	23.7	2.56
Lead	6010B	mg/kg	12.7	0.861	10.9	0.979	10.3	0.869	15	0.923	11.6	0.84	11.8	0.855
pH	9045D	SU	5.59	--	5.37	--	6.59	--	5.43	--	6.89	--	5.42	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**		**07/31/06**	
Sample Time			**11:30**		**11:35**		**11:45**		**12:00**		**12:15**		**12:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	19.8	5.72	20.6	5.84	22.9	5.85	14	5.89	17.5	5.74	23	5.56
Ammonia, Extractable	350.1	mg/kg	3.88	1.19	4.52	1.21	4.98	1.19	2.19	1.21	2.96	1.16	5.08	1.14
Aluminum	6010B	mg/kg	< 3.57	3.57	< 3.64	3.64	< 3.58	3.58	< 3.64	3.64	< 3.49	3.49	< 3.41	3.41
Chromium	6010B	mg/kg	16.9	2.57	15.7	2.68	22	2.59	40.7	2.69	22.1	2.58	17.9	2.54
Lead	6010B	mg/kg	10.7	0.856	10.6	0.892	12.1	0.862	14.5	0.896	13.4	0.86	13.7	0.846
pH	9045D	SU	5.72	--	6	--	6.4	--	6.06	--	5.03	--	5.34	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

August 2006
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A2A**		**A4A**		**AA1**		**B3A**		**B4A**		**DD1**	
Sample Date			**08/29/06**		**08/29/06**		**08/29/06**		**08/29/06**		**08/29/06**		**08/29/06**	
Sample Time			**6:30**		**6:45**		**12:45**		**7:00**		**7:15**		**13:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	22	5.48	17.5	5.49	15	5.76	27.6	5.28	43.3	6.14	28.5	6.17
Ammonia, Extractable	350.1	mg/kg	5.26	1.12	1.35	1.14	5.87	1.17	11.9	1.08	12.3	1.27	9.39	1.28
Aluminum	6010B	mg/kg	< 3.37	3.37	< 3.42	3.42	67.6	3.5	< 3.25	3.25	< 3.82	3.82	147	3.83
Chromium	6010B	mg/kg	18.3	2.34	18.4	2.39	17.1	2.54	13.9	2.47	37.9	2.83	16.6	2.78
Lead	6010B	mg/kg	9.77	0.78	8.03	0.797	12.4	0.846	12.4	0.824	17.8	0.942	22.7	0.926
pH	9045C	SU	6.76	--	7.26	--	5.08	--	6.07	--	6.7	--	4.94	--

Sample ID			**EE1**		**F1A**		**F4A**		**G3A**		**G3B**		**H2A**	
Sample Date			**08/29/06**		**08/29/06**		**08/29/06**		**08/29/06**		**08/29/06**		**08/29/06**	
Sample Time			**12:30**		**7:30**		**7:45**		**8:00**		**8:05**		**8:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.61	5.61	29.5	5.46	18.8	5.43	17.2	5.43	29.4	5.48	20.9	5.66
Ammonia, Extractable	350.1	mg/kg	< 1.15	1.15	11.8	1.11	3.39	1.09	3.09	1.1	11.6	1.1	2.06	1.14
Aluminum	6010B	mg/kg	359	3.44	< 3.34	3.34	< 3.27	3.27	< 3.33	3.33	< 3.3	3.3	< 3.41	3.41
Chromium	6010B	mg/kg	19.7	2.52	18.9	2.38	17.8	2.34	24.4	2.57	20	2.48	11.6	2.37
Lead	6010B	mg/kg	12.4	0.84	15.1	0.795	9.62	0.779	12.4	0.857	11.3	0.827	14.3	0.789
pH	9045C	SU	5	--	5.95	--	7.19	--	6.32	--	6.23	--	6.51	--

Sample ID			**HH1**		**I4A**		**J2A**		**L1A**		**L3A**		**N2A**	
Sample Date			**08/29/06**		**08/29/06**		**08/29/06**		**08/29/06**		**08/29/06**		**08/29/06**	
Sample Time			**12:15**		**8:30**		**8:45**		**9:00**		**9:15**		**9:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16.3	5.68	20.5	5.29	18.2	5.46	59.9	5.5	16.8	5.64	16.4	5.63
Ammonia, Extractable	350.1	mg/kg	6.2	1.14	3.28	1.11	1.63	1.13	24.3	1.11	1.18	1.15	< 1.16	1.16
Aluminum	6010B	mg/kg	101	3.42	< 3.32	3.32	< 3.4	3.4	< 3.34	3.34	< 3.46	3.46	< 3.48	3.48
Chromium	6010B	mg/kg	11.7	2.41	18.5	2.41	13.3	2.62	16	2.4	9.88	2.39	24.5	2.5
Lead	6010B	mg/kg	9.06	0.803	12.3	0.802	11.4	0.873	11.3	0.801	9.98	0.798	10.9	0.833
pH	9045C	SU	5.17	--	6.56	--	7.19	--	6.02	--	6.69	--	6.39	--

August 2006
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O1A**		**O3A**		**P4A**		**S2A**		**S4A**		**T3A**	
Sample Date			**08/29/06**		**08/29/06**		**08/29/06**		**08/29/06**		**08/29/06**		**08/29/06**	
Sample Time			**9:45**		**10:00**		**10:15**		**10:30**		**10:45**		**11:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	142	5.52	18.1	5.53	16.5	5.57	23.5	5.56	25.8	5.58	26	5.54
Ammonia, Extractable	350.1	mg/kg	7.63	1.13	2.34	1.09	1.26	1.12	2.34	1.12	20.7	1.12	11	1.11
Aluminum	6010B	mg/kg	< 3.4	3.4	< 3.28	3.28	< 3.37	3.37	< 3.35	3.35	< 3.36	3.36	< 3.33	3.33
Chromium	6010B	mg/kg	37.7	2.46	26.9	2.42	22.8	2.4	31.4	2.48	18.3	2.57	19.2	2.49
Lead	6010B	mg/kg	12.2	0.821	10.4	0.807	10.8	0.801	12.7	0.825	10.4	0.855	8.32	0.83
pH	9045C	SU	6.34	--	6.35	--	6.56	--	6.68	--	6.19	--	6.42	--

Sample ID			**U1A**		**X4A**		**Y3A**		**Y3B**		**Z2A**	
Sample Date			**08/29/06**		**08/29/06**		**08/29/06**		**08/29/06**		**08/29/06**	
Sample Time			**11:15**		**11:30**		**11:45**		**11:50**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	28.7	5.74	14.8	5.57	33.1	5.71	23.7	5.41	42.9	5.62
Ammonia, Extractable	350.1	mg/kg	4.22	1.16	7.82	1.12	2.73	1.16	4	1.1	8.95	1.14
Aluminum	6010B	mg/kg	< 3.48	3.48	4.58	3.37	< 3.47	3.47	< 3.31	3.31	< 3.41	3.41
Chromium	6010B	mg/kg	27.3	2.4	16.7	2.35	15.3	2.61	20.5	2.52	35.2	2.49
Lead	6010B	mg/kg	9.71	0.8	6.8	0.784	13.2	0.87	12.9	0.84	13.6	0.83
pH	9045C	SU	6.04	--	5.17	--	6.42	--	6.31	--	5.88	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

October 2006
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**	
Sample Time			**7:00**		**14:00**		**7:15**		**7:30**		**7:45**		**14:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12.3	6.31	9.26	6.18	13.9	6.7	18.3	6.4	11.9	6.37	12.7	6.67
Ammonia, Extractable	350.1	mg/kg	4.53	1.27	2.58	1.27	4.23	1.35	7.27	1.31	4.18	1.31	6.88	1.33
Aluminum	6010B	mg/kg	< 3.8	3.8	21	3.82	< 4.06	4.06	< 3.92	3.92	< 3.94	3.94	55.2	4
Chromium	6010B	mg/kg	22.8	2.86	16	2.91	19.1	3.12	7.49	2.85	14.1	2.99	16	2.92
Lead	6010B	mg/kg	11.8	0.953	9.88	0.971	9.34	1.04	13.1	0.951	13.4	0.995	16.2	0.973
pH	9045C	SU	6.69	--	5.17	--	6.17	--	5.93	--	6.13	--	4.92	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**	
Sample Time			**13:45**		**8:00**		**8:15**		**8:20**		**8:30**		**8:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.99	5.99	15.9	6.95	10.4	6.06	12.1	6.11	11.7	6.04	10.6	6.32
Ammonia, Extractable	350.1	mg/kg	1.49	1.24	4.61	1.43	2.04	1.25	1.62	1.26	5.95	1.24	3.88	1.3
Aluminum	6010B	mg/kg	350	3.72	< 4.3	4.3	< 3.76	3.76	< 3.79	3.79	< 3.73	3.73	< 3.9	3.9
Chromium	6010B	mg/kg	25	2.7	13.2	3.29	20.9	2.59	21.9	2.86	22.1	2.58	32.8	2.85
Lead	6010B	mg/kg	12.6	0.9	10.8	1.1	13.9	0.864	12.3	0.955	9.64	0.861	9.74	0.949
pH	9045C	SU	4.92	--	6.08	--	5.99	--	5.89	--	6.49	--	6.41	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**	
Sample Time			**13:00**		**9:00**		**9:15**		**9:30**		**9:45**		**10:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.53	6.25	17.4	6.33	10.5	6.73	13.8	6.02	16.9	6.37	9.92	6.09
Ammonia, Extractable	350.1	mg/kg	< 1.24	1.24	6.66	1.31	2.94	1.35	3.88	1.23	4.15	1.32	5.47	1.22
Aluminum	6010B	mg/kg	30.3	3.73	< 3.93	3.93	< 4.04	4.04	< 3.68	3.68	< 3.96	3.96	< 3.65	3.65
Chromium	6010B	mg/kg	11.5	2.81	34.4	2.96	16.8	3.01	19.2	2.71	24.3	2.75	19.4	2.57
Lead	6010B	mg/kg	9.7	0.936	10.7	0.986	14.3	1	11.4	0.902	15.2	0.916	12	0.858
pH	9045C	SU	5.03	--	6.25	--	5.49	--	5.93	--	6.03	--	6.45	--

October 2006
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**	
Sample Time			**10:15**		**10:30**		**10:45**		**11:00**		**11:15**		**11:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	10.2	6.07	12.7	6.95	10.6	6.26	17.3	6.61	8.84	6.2	8.51	6.01
Ammonia, Extractable	350.1	mg/kg	2.03	1.23	2.65	1.39	1.41	1.25	1.91	1.35	2.54	1.24	3.5	1.22
Aluminum	6010B	mg/kg	< 3.68	3.68	4.49	4.17	< 7.5	7.5	< 4.04	4.04	< 3.72	3.72	< 3.65	3.65
Chromium	6010B	mg/kg	23.9	2.79	23.7	2.9	27.1	2.64	12.7	2.81	23.8	2.72	13.7	2.76
Lead	6010B	mg/kg	11.1	0.932	12	0.965	12.8	0.879	14.9	0.938	13.6	0.906	8.7	0.921
pH	9045C	SU	6.28	--	5.95	--	7.31	--	5.66	--	7.45	--	5.98	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**		**10/18/06**	
Sample Time			**11:45**		**11:50**		**12:00**		**12:15**		**12:30**		**12:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	10.7	5.84	17.6	5.87	20.1	6.5	12.6	6.07	16.6	6.19	13.7	6.06
Ammonia, Extractable	350.1	mg/kg	1.88	1.2	2.29	1.21	3.93	1.29	2.42	1.22	3.31	1.26	< 1.26	1.26
Aluminum	6010B	mg/kg	< 3.61	3.61	< 3.63	3.63	8.99	3.88	< 3.66	3.66	< 3.77	3.77	< 7.56	7.56
Chromium	6010B	mg/kg	15.3	2.69	11.3	2.66	18	2.9	35.7	2.68	26.2	2.69	19.1	2.8
Lead	6010B	mg/kg	8.15	0.898	7.89	0.886	10.6	0.965	11.6	0.895	13.7	0.898	13.5	0.933
pH	9045C	SU	6.1	--	6.15	--	6.38	--	6.4	--	5.69	--	5.66	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

November 2006
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A2A**		**A4A**		**AA1**		**B3A**		**B4A**		**DD1**	
Sample Date			**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**	
Sample Time			**7:00**		**7:15**		**13:30**		**7:30**		**7:45**		**13:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16	6.18	6.13	6.01	6.76	6.51	11.7	6.2	9.78	6.43	9.63	6.51
Ammonia, Extractable	350.1	mg/kg	4.62	1.25	1.69	1.24	< 1.3	1.3	2.08	1.25	1.53	1.29	2.35	1.33
Aluminum	6010B	mg/kg	< 3.74	3.74	< 3.72	3.72	46.7	3.9	< 3.76	3.76	< 3.87	3.87	146	3.98
Chromium	6010B	mg/kg	20.2	2.83	10.9	2.85	26.5	2.91	14.4	2.88	19.9	2.83	19.5	3.02
Lead	6010B	mg/kg	8.99	0.942	8.44	0.95	10.9	0.969	11.7	0.959	12.5	0.942	14.8	1.01
pH	9045C	SU	7.03	--	7.56	--	5.04	--	5.94	--	6.25	--	5.09	--

Sample ID			**EE1**		**F1A**		**F4A**		**F4B**		**G3A**		**H2A**	
Sample Date			**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**	
Sample Time			**13:15**		**8:00**		**8:15**		**8:20**		**8:30**		**8:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.23	6.23	15.6	6.38	17.5	6.39	19.7	6.59	19.8	6.22	17	6.59
Ammonia, Extractable	350.1	mg/kg	< 1.26	1.26	2.9	1.28	2.79	1.33	2.85	1.36	4.99	1.24	6.49	1.35
Aluminum	6010B	mg/kg	329	3.78	< 3.84	3.84	< 3.98	3.98	< 4.08	4.08	< 3.73	3.73	< 4.05	4.05
Chromium	6010B	mg/kg	20.6	2.83	16.3	2.96	31.3	3.07	16.1	3.41	15.6	2.81	30.4	3.11
Lead	6010B	mg/kg	12.5	0.943	12.4	0.985	9.58	1.02	9.73	1.14	9.98	0.937	12.9	1.04
pH	9045C	SU	5.09	--	5.78	--	7	--	6.95	--	5.97	--	6.12	--

Sample ID			**HH1**		**I4A**		**J2A**		**L1A**		**L3A**		**M4A**	
Sample Date			**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**	
Sample Time			**13:00**		**9:00**		**9:15**		**9:30**		**9:45**		**10:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.8	6.35	14	7.15	11.7	6.42	12	6.51	14.9	6.37	< 6.55	6.55
Ammonia, Extractable	350.1	mg/kg	< 1.28	1.28	5.16	1.42	1.62	1.31	1.37	1.31	< 1.3	1.3	< 1.34	1.34
Aluminum	6010B	mg/kg	60	3.83	< 4.25	4.25	< 3.94	3.94	< 3.93	3.93	< 3.91	3.91	< 4.01	4.01
Chromium	6010B	mg/kg	16.8	2.95	22	3.3	8.46	2.96	22	2.91	23.5	2.92	32.7	2.7
Lead	6010B	mg/kg	9.43	0.982	16.4	1.1	11	0.988	14.3	0.969	12.9	0.974	10.8	0.901
pH	9045C	SU	5.12	--	6.42	--	7.09	--	6.31	--	7.05	--	6	--

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**N2A**		**O1A**		**O3A**		**P4A**		**S2A**		**S4A**	
Sample Date			**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**	
Sample Time			**10:15**		**10:30**		**10:45**		**11:00**		**11:15**		**11:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.58	6.42	7.35	6.1	13.3	6.23	9.24	6.23	12.3	6.19	13.6	6.44
Ammonia, Extractable	350.1	mg/kg	< 1.29	1.29	2.77	1.22	4.88	1.26	2.11	1.27	3	1.25	4.24	1.3
Aluminum	6010B	mg/kg	< 3.88	3.88	< 3.67	3.67	6.68	3.79	< 3.81	3.81	< 3.75	3.75	< 3.89	3.89
Chromium	6010B	mg/kg	45.7	2.83	38.7	2.81	33.2	2.92	12.3	2.9	21.1	2.74	11.4	2.95
Lead	6010B	mg/kg	11.9	0.943	13.2	0.936	12.6	0.973	8.71	0.966	11.9	0.913	10.9	0.983
pH	9045C	SU	5.82	--	5.74	--	6.38	--	6.5	--	6.04	--	6.24	--

Sample ID			**T3A**		**T3B**		**U1A**		**X4A**		**Y3A**		**Z2A**	
Sample Date			**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**		**11/30/06**	
Sample Time			**11:45**		**11:50**		**12:00**		**12:15**		**12:30**		**12:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.64	6.03	9.98	6.28	10.5	6.18	7.47	6.1	21.4	6.67	18.5	6.47
Ammonia, Extractable	350.1	mg/kg	3.46	1.23	2.3	1.26	4	1.26	< 1.22	1.22	4.75	1.35	2.22	1.29
Aluminum	6010B	mg/kg	< 3.7	3.7	< 3.78	3.78	< 3.78	3.78	121	3.65	< 4.05	4.05	< 3.87	3.87
Chromium	6010B	mg/kg	18.2	2.78	17.5	2.91	25.2	2.86	14	2.72	17.5	3.13	32.5	2.99
Lead	6010B	mg/kg	8.47	0.928	8.39	0.969	11.2	0.952	6.8	0.906	14.6	1.04	14.2	0.996
pH	9045C	SU	5.77	--	5.63	--	5.64	--	4.97	--	6.57	--	5.77	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

December 2006
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A3A**		**AA1**		**B1A**		**D2A**		**DD1**		**E4A**	
Sample Date			**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**	
Sample Time			**7:30**		**14:00**		**7:45**		**8:00**		**14:15**		**8:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.1	5.98	8.21	6.33	18.2	6.22	18.7	6.35	15.7	7.15	9.44	6.14
Ammonia, Extractable	350.1	mg/kg	< 1.21	1.21	1.39	1.29	2.7	1.25	6.88	1.3	2.58	1.43	3.7	1.25
Aluminum	6010B	mg/kg	< 3.62	3.62	84.9	3.88	< 3.75	3.75	13.5	3.91	92	4.29	< 3.76	3.76
Chromium	6010B	mg/kg	15.8	2.55	14.9	2.73	8.63	2.7	12.4	2.94	15.1	3.25	14.1	2.77
Lead	6010B	mg/kg	11.1	0.85	11.3	0.911	10.4	0.899	13	0.979	21.1	1.08	8.31	0.922
pH	9045C	SU	8.15	--	4.81	--	6.16	--	5.54	--	4.92	--	6.2	--

Sample ID			**EE1**		**F3A**		**G2A**		**G2B**		**H1A**		**H4A**	
Sample Date			**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**	
Sample Time			**13:45**		**8:30**		**8:45**		**8:50**		**9:00**		**9:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.01	6.01	19	6.31	14.1	6.55	12.2	6.55	13.5	6.8	19.1	6.34
Ammonia, Extractable	350.1	mg/kg	< 1.2	1.2	6.76	1.26	12.3	1.31	2.53	1.34	< 1.36	1.36	4.58	1.28
Aluminum	6010B	mg/kg	390	3.6	< 3.79	3.79	< 3.94	3.94	< 4.03	4.03	< 4.09	4.09	< 3.85	3.85
Chromium	6010B	mg/kg	19.5	2.76	7.98	2.87	21.9	3.05	26.1	3.05	20.2	3.02	24.8	2.91
Lead	6010B	mg/kg	14.5	0.92	10.9	0.957	12.7	1.02	16.2	1.02	21.1	1.01	9.21	0.971
pH	9045C	SU	4.8	--	5.86	--	6.02	--	6.11	--	5.68	--	5.61	--

Sample ID			**HH1**		**J3A**		**L4A**		**M2A**		**N1A**		**N3A**	
Sample Date			**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**	
Sample Time			**13:30**		**9:30**		**9:45**		**10:00**		**10:15**		**10:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.44	6.11	9.93	6.41	10.4	6.48	15.8	6.35	7.54	6.36	14.7	6.17
Ammonia, Extractable	350.1	mg/kg	< 1.24	1.24	< 1.3	1.3	1.93	1.3	2.31	1.29	< 1.28	1.28	1.49	1.24
Aluminum	6010B	mg/kg	107	3.71	< 3.88	3.88	< 3.89	3.89	< 3.87	3.87	4	3.84	< 3.73	3.73
Chromium	6010B	mg/kg	11.7	2.6	29.5	3.01	12.7	2.77	34.7	2.96	31.8	2.95	26.6	2.85
Lead	6010B	mg/kg	8.08	0.867	16.8	1	16.3	0.922	18.2	0.985	16	0.985	9.65	0.95
pH	9045C	SU	4.75	--	7.11	--	6.18	--	6.3	--	6.24	--	7.3	--

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O4A**		**Q2A**		**S3A**		**T1A**		**T4A**		**U2A**	
Sample Date			**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**	
Sample Time			**10:45**		**11:00**		**11:15**		**11:30**		**11:45**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	13	6.05	10.3	5.95	12.3	5.84	11.1	5.87	14.5	6.24	11.2	6.1
Ammonia, Extractable	350.1	mg/kg	< 1.24	1.24	2.5	1.22	7.89	1.22	3.03	1.22	5.68	1.25	3.45	1.25
Aluminum	6010B	mg/kg	< 3.71	3.71	< 3.67	3.67	< 3.66	3.66	< 3.66	3.66	< 3.75	3.75	13.3	3.75
Chromium	6010B	mg/kg	36.5	2.65	24.4	2.81	17.7	2.58	15.1	2.79	13.4	2.8	22.1	2.88
Lead	6010B	mg/kg	15.6	0.884	11.5	0.936	11.2	0.86	12.7	0.93	14	0.933	11.9	0.961
pH	9045C	SU	6.37	--	6.75	--	7.37	--	5.96	--	6.46	--	5.3	--

Sample ID			**V4A**		**V4B**		**W3A**		**Y2A**		**Z1A**		**Z4A**	
Sample Date			**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**		**12/20/06**	
Sample Time			**12:15**		**12:20**		**12:30**		**12:45**		**13:00**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16.4	6.16	17.2	6.22	17.3	6.26	19.4	6.18	20.3	6.2	16.3	6.1
Ammonia, Extractable	350.1	mg/kg	1.94	1.26	3.6	1.28	2.58	1.26	5.14	1.27	9.64	1.24	2.8	1.23
Aluminum	6010B	mg/kg	< 3.77	3.77	10.2	3.83	< 3.77	3.77	< 3.8	3.8	15.3	3.73	< 3.69	3.69
Chromium	6010B	mg/kg	10.7	2.86	14.1	2.95	15.5	2.88	24.6	2.92	28.5	2.77	28.2	2.66
Lead	6010B	mg/kg	10.2	0.954	13.2	0.982	11.8	0.958	16.1	0.973	15	0.923	16	0.887
pH	9045C	SU	5.54	--	5.64	--	6.43	--	5.93	--	5.23	--	5.69	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

February 20, 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**	
Sample Time			**7:30**		**14:00**		**7:45**		**8:00**		**8:15**		**14:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16.9	7.18	20.1	6.66	124	7.24	10.7	6.46	7.52	6.54	13.8	6.99
Ammonia, Extractable	350.1	mg/kg	5.17	1.48	2.68	1.36	3.97	1.45	3.66	1.33	2.39	1.3	5.48	1.41
Aluminum	6010B	mg/kg	38	4.43	55.1	4.07	< 4.36	4.36	< 3.99	3.99	< 3.91	3.91	239	4.22
Chromium	6010B	mg/kg	18.6	3.28	22.2	3.09	15.4	3.12	20.4	2.92	18.6	3	33	2.87
Lead	6010B	mg/kg	11.5	1.09	9.56	1.03	11	1.04	17.3	0.972	15.8	1	12.6	0.958
pH	9045C	SU	6.7	--	4.84	--	6.45	--	6.09	--	5.63	--	4.86	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**	
Sample Time			**13:45**		**8:30**		**8:45**		**8:50**		**9:00**		**9:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.66	6.66	12.6	6.64	18.4	7.93	17	6.32	7.77	6.19	164	18.8
Ammonia, Extractable	350.1	mg/kg	< 1.38	1.38	3.66	1.35	5.65	1.64	22.1	1.29	5.86	1.25	109	3.95
Aluminum	6010B	mg/kg	451	4.15	< 4.04	4.04	< 4.91	4.91	< 3.88	3.88	< 3.76	3.76	< 11.9	11.9
Chromium	6010B	mg/kg	26.2	3.01	10.6	2.95	18.4	3.74	22	2.85	16.1	2.87	15.5	8.72
Lead	6010B	mg/kg	14.6	1	11.3	0.983	16.4	1.25	15.2	0.951	10.7	0.957	10.9	2.91
pH	9045C	SU	4.95	--	6.35	--	6.3	--	6.32	--	3.13	--	6.6	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**	
Sample Time			**13:30**		**9:30**		**9:45**		**10:00**		**10:15**		**10:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.28	6.28	174	6.79	17.8	7.05	12.6	6.81	18.1	6.98	15	6.47
Ammonia, Extractable	350.1	mg/kg	< 1.28	1.28	4.46	1.37	8.21	1.42	4.78	1.37	5.06	1.4	2.91	1.33
Aluminum	6010B	mg/kg	113	3.84	< 4.1	4.1	5.72	4.25	< 4.11	4.11	< 4.21	4.21	< 3.98	3.98
Chromium	6010B	mg/kg	9.61	2.91	17.8	2.75	17.2	3.01	15.4	3.14	31.1	2.97	19.5	3.06
Lead	6010B	mg/kg	9.46	0.97	13.5	0.917	17	1	12.3	1.05	14.5	0.99	48.3	1.02
pH	9045C	SU	5.11	--	6.34	--	5.76	--	6.27	--	6	--	6.38	--

February 20, 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**	
Sample Time			**10:45**		**11:00**		**11:15**		**11:30**		**11:45**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	20.3	6.24	41.8	7.78	9.82	6.59	21	6.96	14.8	7.19	16.1	6.74
Ammonia, Extractable	350.1	mg/kg	3.25	1.28	13.6	1.55	4.36	1.33	10.3	1.39	2.71	1.46	3.32	1.37
Aluminum	6010B	mg/kg	< 3.83	3.83	< 4.64	4.64	< 3.98	3.98	< 4.18	4.18	< 4.37	4.37	< 4.11	4.11
Chromium	6010B	mg/kg	21	2.78	21.3	3.13	70.3	2.99	9.95	2.99	20.5	3.39	33.5	3
Lead	6010B	mg/kg	15	0.925	10.9	1.04	18.3	0.998	9.42	0.996	20.2	1.13	13.6	1
pH	9045C	SU	6.6	--	5.94	--	7.31	--	5.65	--	7.21	--	6.27	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**		**02/20/07**	
Sample Time			**12:15**		**12:20**		**12:30**		**12:45**		**13:00**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.72	6.58	8.9	6.35	35.2	7.66	14.1	7.09	15.2	6.31	15.5	6.32
Ammonia, Extractable	350.1	mg/kg	19.4	1.32	1.98	1.3	3.88	1.56	11.2	1.46	2.02	1.3	1.54	1.28
Aluminum	6010B	mg/kg	< 3.96	3.96	< 3.91	3.91	< 4.69	4.69	< 4.39	4.39	< 3.89	3.89	11.3	3.84
Chromium	6010B	mg/kg	19	2.9	22.1	3.01	16.4	3.46	27.7	3.07	21.4	2.82	41.7	2.61
Lead	6010B	mg/kg	10.7	0.966	9.7	1	9.97	1.15	12.6	1.02	13.8	0.942	16	0.87
pH	9045C	SU	5.93	--	6.15	--	6.26	--	6.51	--	5.69	--	5.44	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

February 27, 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A2A**		**A4A**		**AA1**		**B3A**		**B4A**		**DD1**	
Sample Date			**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**	
Sample Time			**7:45**		**8:00**		**14:15**		**8:15**		**8:30**		**14:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.7	5.88	< 5.73	5.73	11.1	5.7	9.2	6.57	13.2	6.66	64.1	6.01
Ammonia, Extractable	350.1	mg/kg	3.61	1.26	< 1.24	1.24	2	1.31	1.99	1.33	2.48	1.35	3.27	1.34
Aluminum	6010B	mg/kg	< 3.77	3.77	< 3.73	3.73	41.8	3.92	4.02	3.98	12.1	4.05	146	4.01
Chromium	6010B	mg/kg	21.8	2.81	13.3	2.82	15.7	2.94	12.4	3.04	14.3	3.12	14.9	2.76
Lead	6010B	mg/kg	11.8	0.937	9.02	0.939	10.2	0.982	14.1	1.01	12.8	1.04	15.2	0.921
pH	9045C	SU	6.65	--	7.86	--	4.87	--	6.19	--	6.18	--	4.96	--

Sample ID			**EE1**		**F1A**		**F4A**		**F4B**		**G3A**		**H2A**	
Sample Date			**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**	
Sample Time			**14:00**		**8:45**		**9:00**		**9:05**		**9:15**		**9:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.34	6.34	11.4	6.41	8.49	6.28	11.2	6.38	15.7	6.27	10.8	6.13
Ammonia, Extractable	350.1	mg/kg	< 1.28	1.28	5.53	1.3	7.8	1.4	3.6	1.3	5.98	1.3	5.15	1.36
Aluminum	6010B	mg/kg	416	3.85	< 3.89	3.89	< 4.2	4.2	< 3.91	3.91	< 3.91	3.91	< 4.07	4.07
Chromium	6010B	mg/kg	20.4	2.86	16.1	2.99	22	3.09	16.7	2.9	31.2	2.98	14.8	2.83
Lead	6010B	mg/kg	14.8	0.952	14.3	0.998	11.6	1.03	11.1	0.965	14.2	0.994	14.3	0.943
pH	9045C	SU	5	--	6.13	--	6.91	--	6.88	--	6.03	--	6.44	--

Sample ID			**HH1**		**I4A**		**J2A**		**L1A**		**L3A**		**M4A**	
Sample Date			**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**	
Sample Time			**13:45**		**9:45**		**10:00**		**10:15**		**10:30**		**10:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.52	5.91	9.45	7.27	13.2	6.81	10.6	6.29	< 6.7	6.7	12.6	6.3
Ammonia, Extractable	350.1	mg/kg	< 1.29	1.29	6.74	1.6	7.58	1.46	2.12	1.3	3.02	1.48	1.83	1.31
Aluminum	6010B	mg/kg	93.1	3.86	< 4.8	4.8	< 4.38	4.38	< 3.9	3.9	< 4.44	4.44	< 3.93	3.93
Chromium	6010B	mg/kg	15.1	2.92	16.9	3.38	10.9	3.29	16.7	2.71	17.5	3.08	15.9	2.91
Lead	6010B	mg/kg	7.45	0.975	16.5	1.13	11.9	1.1	13.3	0.903	13.3	1.03	12.8	0.97
pH	9045C	SU	4.88	--	6.42	--	6.91	--	6.37	--	6.54	--	5.9	--

February 27, 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**N2A**		**O1A**		**O3A**		**P4A**		**S2A**		**S4A**	
Sample Date			**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**	
Sample Time			**11:00**		**11:15**		**11:30**		**11:45**		**12:00**		**12:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.65	6.65	7.99	6.05	11.5	6.31	7.94	6.52	17.2	6.28	15.4	6.29
Ammonia, Extractable	350.1	mg/kg	2.98	1.35	2.7	1.3	3.43	1.28	5.59	1.33	5.71	1.31	4.05	1.35
Aluminum	6010B	mg/kg	8.46	4.06	< 3.91	3.91	< 3.85	3.85	11.5	4	< 3.92	3.92	< 4.04	4.04
Chromium	6010B	mg/kg	38.1	2.84	28.6	2.75	26.3	2.82	16.9	3.03	12	3.01	15	3.06
Lead	6010B	mg/kg	14.4	0.947	14.9	0.917	12.8	0.94	11.8	1.01	12.1	1	12.1	1.02
pH	9045C	SU	5.38	--	5.94	--	6.26	--	6.02	--	6.37	--	5.81	--

Sample ID			**T3A**		**T3B**		**U1A**		**X4A**		**Y3A**		**Z2A**	
Sample Date			**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**		**02/27/07**	
Sample Time			**12:30**		**12:35**		**12:45**		**13:00**		**13:15**		**13:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.5	6.25	15.3	5.99	12.1	6.34	6.2	5.96	12.8	6.5	18.1	5.71
Ammonia, Extractable	350.1	mg/kg	2.56	1.27	4.1	1.25	3.21	1.29	< 1.27	1.27	5.77	1.39	4.48	1.29
Aluminum	6010B	mg/kg	< 3.81	3.81	< 3.74	3.74	18.2	3.86	83.7	3.8	< 4.17	4.17	< 3.86	3.86
Chromium	6010B	mg/kg	14.2	2.82	16.1	2.89	24.7	2.88	13.8	2.8	22.7	3.12	16.1	2.96
Lead	6010B	mg/kg	9.78	0.941	8.88	0.964	13.6	0.961	8.07	0.934	17	1.04	12.9	0.985
pH	9045C	SU	6.07	--	5.78	--	5.39	--	4.91	--	6.1	--	5.73	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

March 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			A3A		AA1		B1A		D2A		DD1		E4A	
Sample Date			03/21/07		03/21/07		03/21/07		03/21/07		03/21/07		03/21/07	
Sample Time			7:30		14:00		7:45		8:00		14:15		8:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.6	6.13	11.7	6.37	21.6	6.33	19	6.26	19.9	6.32	11.9	5.99
Ammonia, Extractable	350.1	mg/kg	11	1.23	19.7	1.31	8.3	1.28	12.8	1.28	20.3	1.28	9.3	1.23
Aluminum	6010B	mg/kg	< 3.69	3.69	104	3.94	< 3.84	3.84	6.28	3.83	91.3	3.85	< 3.69	3.69
Chromium	6010B	mg/kg	23.8	2.75	29.1	2.99	9.57	2.91	10.7	2.87	22.9	2.96	12.9	2.58
Lead	6010B	mg/kg	13.1	0.917	13	0.997	9.94	0.969	12.3	0.957	13.5	0.988	9.55	0.86
pH	9045C	SU	8.17	--	4.9	--	6.32	--	5.73	--	5.03	--	5.94	--

Sample ID			EE1		F3A		G2A		G2B		H1A		H4A	
Sample Date			03/21/07		03/21/07		03/21/07		03/21/07		03/21/07		03/21/07	
Sample Time			13:45		8:30		8:45		8:50		9:00		9:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	6.98	6.15	23.3	6.25	20.5	6.53	20.5	6.8	14.9	6.6	17.4	6.38
Ammonia, Extractable	350.1	mg/kg	6.72	1.26	10.8	1.26	17.7	1.35	8.22	1.4	7.6	1.33	5.59	1.27
Aluminum	6010B	mg/kg	444	3.78	16.5	3.78	< 4.05	4.05	< 4.19	4.19	< 4	4	< 3.82	3.82
Chromium	6010B	mg/kg	18.4	2.71	17	2.86	16.2	3.13	19.6	3.13	17.8	2.86	31.1	2.73
Lead	6010B	mg/kg	14.7	0.903	14.5	0.954	12.3	1.04	14.9	1.04	13.1	0.953	11.8	0.91
pH	9045C	SU	4.99	--	6.69	--	6.08	--	6.16	--	5.94	--	5.56	--

Sample ID			HH1		J3A		L4A		M2A		N1A		N3A	
Sample Date			03/21/07		03/21/07		03/21/07		03/21/07		03/21/07		03/21/07	
Sample Time			13:30		9:30		9:45		10:00		10:15		10:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.3	6.29	18.8	6.49	15.4	6.26	23	6.39	13.4	6.13	21.9	6.21
Ammonia, Extractable	350.1	mg/kg	7.56	1.25	3.74	1.34	13	1.29	19.6	1.29	16.9	1.27	19.3	1.27
Aluminum	6010B	mg/kg	117	3.77	< 4.01	4.01	< 3.86	3.86	< 3.86	3.86	< 3.8	3.8	< 3.82	3.82
Chromium	6010B	mg/kg	7.5	2.82	27.3	2.86	17.5	2.91	18.5	2.8	19.5	2.75	22.1	2.9
Lead	6010B	mg/kg	9.43	0.939	14.1	0.954	10.7	0.968	14.5	0.933	14.7	0.918	13.3	0.966
pH	9045C	SU	5.02	--	6.9	--	6.36	--	6.59	--	6.16	--	7.12	--

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O4A**		**Q2A**		**S3A**		**T1A**		**T4A**		**U2A**	
Sample Date			**03/21/07**		**03/21/07**		**03/21/07**		**03/21/07**		**03/21/07**		**03/21/07**	
Sample Time			**10:45**		**11:00**		**11:15**		**11:30**		**11:45**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	20.2	6.5	13.9	6.03	18.1	6.22	14.6	5.98	36.9	6.3	17.4	6.1
Ammonia, Extractable	350.1	mg/kg	14.5	1.3	6.47	1.24	6.94	1.28	17.8	1.24	43.3	1.27	18.7	1.24
Aluminum	6010B	mg/kg	< 3.91	3.91	< 3.73	3.73	< 3.84	3.84	< 3.71	3.71	< 3.8	3.8	< 3.72	3.72
Chromium	6010B	mg/kg	20.4	2.7	28.3	2.76	28.6	2.7	27.6	2.69	13.7	2.88	17.6	2.86
Lead	6010B	mg/kg	15.5	0.902	10.4	0.921	17.2	0.901	14.6	0.896	14.9	0.96	11.4	0.953
pH	9045C	SU	6.28	--	6.19	--	7.13	--	5.81	--	6.65	--	5.82	--

Sample ID			**V4A**		**V4B**		**W3A**		**Y2A**		**Z1A**		**Z4A**	
Sample Date			**03/21/07**		**03/21/07**		**03/21/07**		**03/21/07**		**03/21/07**		**03/21/07**	
Sample Time			**12:15**		**12:20**		**12:30**		**12:45**		**13:00**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16.8	6.23	17.1	6.33	19.7	6.58	18.9	6.32	11.4	6.14	20.6	6.26
Ammonia, Extractable	350.1	mg/kg	2.76	1.26	4.81	1.27	3.07	1.33	4.66	1.27	4.92	1.26	3.95	1.26
Aluminum	6010B	mg/kg	< 3.77	3.77	< 7.62	7.62	< 4	4	< 3.82	3.82	49.9	3.77	< 3.77	3.77
Chromium	6010B	mg/kg	27.3	2.89	15.4	2.93	12.7	2.88	15.4	2.79	26.8	2.6	61.5	5.54
Lead	6010B	mg/kg	15.1	0.965	15.8	0.978	13.3	0.959	13.2	0.928	12.4	0.867	27.1	1.85
pH	9045C	SU	5.82	--	5.84	--	6.53	--	6.03	--	5.28	--	5.86	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

April 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**	
Sample Time			**7:30**		**14:00**		**7:45**		**8:00**		**8:15**		**14:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	30.9	5.74	14.7	6.37	19.3	5.94	16.2	6.1	15.7	5.93	18.3	6.51
Ammonia, Extractable	350.1	mg/kg	7.84	1.19	34.9	1.3	6.54	1.2	3.89	1.23	5.33	1.21	6.18	1.32
Aluminum	6010B	mg/kg	< 3.56	3.56	75.7	3.89	< 3.59	3.59	< 3.68	3.68	< 3.62	3.62	192	3.95
Chromium	6010B	mg/kg	34.4	2.74	16.9	2.9	12.5	2.71	11.1	2.83	11.5	2.76	24.8	2.72
Lead	6010B	mg/kg	14.1	0.914	13.1	0.967	9.34	0.903	18	0.943	12.7	0.921	17.7	0.907
pH	9045C	SU	6.75	--	4.9	--	5.95	--	6.05	--	6.27	--	4.85	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**	
Sample Time			**13:45**		**8:30**		**8:45**		**8:50**		**9:00**		**9:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.38	6.09	16.7	6.44	17.6	5.61	16.7	5.75	23.6	5.64	23.6	5.83
Ammonia, Extractable	350.1	mg/kg	2.24	1.22	3.86	1.31	2.59	1.14	2.46	1.15	6.11	1.16	11.3	1.19
Aluminum	6010B	mg/kg	447	3.66	< 3.94	3.94	< 3.41	3.41	< 3.46	3.46	< 3.48	3.48	< 3.56	3.56
Chromium	6010B	mg/kg	22.1	2.72	13.2	3.03	14.2	2.61	16.2	2.56	14.9	2.55	25.1	2.7
Lead	6010B	mg/kg	15	0.907	11.1	1.01	13.1	0.872	13.8	0.853	12.8	0.849	12.4	0.901
pH	9045C	SU	5.01	--	6.01	--	6.36	--	6.28	--	6.39	--	7.35	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**	
Sample Time			**13:30**		**9:30**		**9:45**		**10:00**		**10:15**		**10:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.4	5.85	17.5	5.93	19.7	7.15	16.4	5.74	28.8	6.83	16.7	5.83
Ammonia, Extractable	350.1	mg/kg	5.68	1.19	4.72	1.21	8.34	1.45	5.01	1.17	7.34	1.4	3.1	1.18
Aluminum	6010B	mg/kg	82.7	3.56	7.74	3.63	< 4.36	4.36	< 3.5	3.5	< 4.2	4.2	< 3.54	3.54
Chromium	6010B	mg/kg	12	2.64	22.5	2.65	18.6	3.31	16	2.67	61	6.43	24.7	2.55
Lead	6010B	mg/kg	8.59	0.881	13	0.884	20.2	1.1	12.3	0.89	21.3	2.14	12.4	0.849
pH	9045C	SU	5.04	--	6.33	--	5.68	--	5.79	--	6.16	--	6.7	--

April 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**	
Sample Time			**10:45**		**11:00**		**11:15**		**11:30**		**11:45**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	24.4	5.85	15.1	5.99	19.5	6.04	21.5	6.02	10.7	5.91	18.8	5.94
Ammonia, Extractable	350.1	mg/kg	7.78	1.18	2.33	1.21	7.28	1.22	7.66	1.21	4.52	1.2	5.4	1.22
Aluminum	6010B	mg/kg	< 3.55	3.55	< 3.63	3.63	< 3.65	3.65	< 3.62	3.62	< 3.61	3.61	< 3.65	3.65
Chromium	6010B	mg/kg	18.9	2.72	19.9	2.79	35.7	2.79	22.5	2.78	23.5	2.54	11	2.81
Lead	6010B	mg/kg	10.1	0.907	12.1	0.93	15.4	0.929	14	0.928	12.6	0.847	9.33	0.936
pH	9045C	SU	6.03	--	5.94	--	7.35	--	5.78	--	7.56	--	6.43	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**		**04/26/07**	
Sample Time			**12:15**		**12:20**		**12:30**		**12:45**		**13:00**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	15.4	5.88	20	5.87	23.3	5.91	20.3	6.02	25.6	6.3	17.8	5.72
Ammonia, Extractable	350.1	mg/kg	4.72	1.18	5.59	1.19	6.96	1.21	7.04	1.2	8.98	1.28	6.94	1.16
Aluminum	6010B	mg/kg	< 3.54	3.54	< 3.56	3.56	< 3.63	3.63	< 3.61	3.61	< 3.85	3.85	< 3.49	3.49
Chromium	6010B	mg/kg	8.37	2.73	14.1	2.69	11.6	2.77	25.9	2.77	16.4	2.76	26.9	2.66
Lead	6010B	mg/kg	9.3	0.91	10.9	0.898	10.3	0.924	18.1	0.923	12.2	0.919	14.3	0.888
pH	9045C	SU	6.39	--	6.32	--	6.64	--	6.74	--	5.75	--	5.74	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

May 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A2A**		**A4A**		**AA1**		**B3A**		**B4A**		**DD1**	
Sample Date			**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**	
Sample Time			**7:30**		**7:45**		**14:00**		**8:00**		**8:15**		**14:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	19	5.52	9.28	5.46	19.3	5.9	23.8	5.44	16.6	5.51	15.5	6.4
Ammonia, Extractable	350.1	mg/kg	8.2	1.13	1.77	1.11	69.8	4.63	3.67	1.1	2.44	1.12	7.99	1.26
Aluminum	6010B	mg/kg	< 3.38	3.38	< 3.34	3.34	108	3.47	< 3.31	3.31	< 3.37	3.37	157	3.79
Chromium	6010B	mg/kg	21.3	2.58	17.5	2.57	13.9	2.73	12.6	2.59	9.65	2.37	20.4	2.92
Lead	6010B	mg/kg	12.3	0.858	12.6	0.858	15	0.911	13.4	0.863	14.2	0.791	21.7	0.972
pH	9045C	SU	7.73	--	7.5	--	5.12	--	6.4	--	6.59	--	4.82	--

Sample ID			**EE1**		**F1A**		**F4A**		**F4B**		**G3A**		**H2A**	
Sample Date			**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**	
Sample Time			**13:45**		**8:30**		**8:45**		**8:50**		**9:00**		**9:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.56	5.9	25.7	5.47	15.1	5.72	16.7	5.67	18	5.37	11.7	6.15
Ammonia, Extractable	350.1	mg/kg	2.88	1.15	4.12	1.1	6.8	1.17	4.05	1.15	3.33	1.08	5.17	1.2
Aluminum	6010B	mg/kg	510	3.45	< 3.3	3.3	< 3.5	3.5	< 3.44	3.44	< 3.23	3.23	< 3.59	3.59
Chromium	6010B	mg/kg	22.6	2.71	13.9	2.54	19	2.58	16.1	2.62	16.3	2.28	18.9	2.79
Lead	6010B	mg/kg	14.8	0.904	13.5	0.845	12.8	0.859	12.8	0.874	11.8	0.759	13.8	0.931
pH	9045C	SU	5.03	--	5.88	--	6.69	--	6.67	--	5.94	--	6.01	--

Sample ID			**HH1**		**I4A**		**J2A**		**L1A**		**L3A**		**M4A**	
Sample Date			**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**	
Sample Time			**13:30**		**9:30**		**9:45**		**10:00**		**10:15**		**10:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	19.9	5.9	17.1	5.51	14.1	5.51	17.8	5.45	17.8	5.79	25.7	6.48
Ammonia, Extractable	350.1	mg/kg	5.09	1.2	4	1.11	2.08	1.12	2.31	1.11	2.53	1.16	3.52	1.32
Aluminum	6010B	mg/kg	72.2	3.59	< 3.34	3.34	< 3.35	3.35	< 3.34	3.34	< 3.49	3.49	< 7.95	7.95
Chromium	6010B	mg/kg	14.7	2.69	18.8	2.53	14.9	2.58	12.9	2.62	12.9	2.68	17.4	2.77
Lead	6010B	mg/kg	10.4	0.898	16.8	0.844	13.5	0.86	12.9	0.874	12	0.894	12.6	0.924
pH	9045C	SU	4.96	--	6.33	--	6.8	--	6.01	--	7.05	--	5.92	--

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Soil Indicator Parameters Data Summary Table
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Orange County, Virginia

Sample ID			**N2A**		**O1A**		**O3A**		**P4A**		**S2A**		**S4A**	
Sample Date			**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**	
Sample Time			**10:45**		**11:00**		**11:15**		**11:30**		**11:45**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.78	5.85	27	5.8	21.8	5.51	16.2	5.49	28.1	5.76	21.8	5.51
Ammonia, Extractable	350.1	mg/kg	2.89	1.19	4.26	1.19	4.47	1.1	2.96	1.13	9.24	1.12	4.57	1.11
Aluminum	6010B	mg/kg	< 3.56	3.56	< 3.56	3.56	< 3.31	3.31	< 6.76	6.76	< 3.37	3.37	< 3.34	3.34
Chromium	6010B	mg/kg	25.8	2.71	25.2	2.77	30.6	2.59	24.3	2.56	21.4	2.68	10.6	2.62
Lead	6010B	mg/kg	13.4	0.903	12.1	0.923	12.5	0.862	12.9	0.852	13.4	0.893	12.5	0.872
pH	9045C	SU	5.79	--	6.2	--	6	--	6.32	--	6.4	--	5.89	--

Sample ID			**T3A**		**T3B**		**U1A**		**X4A**		**Y3A**		**Z2A**	
Sample Date			**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**		**05/24/07**	
Sample Time			**12:15**		**12:20**		**12:30**		**12:45**		**13:00**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	21.5	5.75	23.5	5.59	31.2	5.66	19.2	5.72	27.4	5.56	37	5.54
Ammonia, Extractable	350.1	mg/kg	6.27	1.17	6.41	1.16	5	1.16	4.31	1.15	4.63	1.13	6.49	1.13
Aluminum	6010B	mg/kg	< 3.5	3.5	< 3.49	3.49	< 3.48	3.48	195	3.46	< 3.39	3.39	< 3.38	3.38
Chromium	6010B	mg/kg	18.2	2.61	19.7	2.58	22.9	2.66	14.8	2.64	19.9	2.52	20	2.38
Lead	6010B	mg/kg	10.2	0.871	10.6	0.858	13.4	0.886	8.01	0.88	15.2	0.841	14.8	0.794
pH	9045C	SU	6.24	--	6.25	--	5.46	--	4.88	--	6.23	--	5.8	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

June 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			A3A		AA1		B1A		D2A		DD1		E4A	
Sample Date			06/20/07		06/20/07		06/20/07		06/20/07		06/20/07		06/20/07	
Sample Time			6:30		13:00		6:45		7:00		13:15		7:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12.1	5.81	9.94	5.71	15.3	5.87	14.6	5.93	16.1	6.33	17.8	5.95
Ammonia, Extractable	350.1	mg/kg	2.1	1.19	< 1.13	1.13	3.12	1.17	4.34	1.18	2.27	1.28	3.8	1.2
Aluminum	6010B	mg/kg	< 3.58	3.58	152	3.39	< 3.52	3.52	< 3.53	3.53	165	3.85	4.64	3.6
Chromium	6010B	mg/kg	19.9	2.71	14.4	2.35	11.4	2.65	12.3	2.7	23.2	2.66	8.52	2.49
Lead	6010B	mg/kg	10.6	0.905	9.06	0.782	12.1	0.883	11	0.9	16	0.885	9.92	0.829
pH	9045C	SU	8.35	--	5.04	--	6.96	--	5.77	--	4.94	--	6.28	--

Sample ID			EE1		F3A		G2A		G2B		H1A		H4A	
Sample Date			06/20/07		06/20/07		06/20/07		06/20/07		06/20/07		06/20/07	
Sample Time			12:45		7:30		7:45		7:50		8:00		8:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.9	5.9	24	5.8	21.5	6.02	20.6	6.02	16.2	5.99	22	6.09
Ammonia, Extractable	350.1	mg/kg	< 1.19	1.19	7.2	1.17	6.5	1.22	3.47	1.2	16.2	1.21	4.75	1.23
Aluminum	6010B	mg/kg	448	3.57	42.7	3.52	< 3.65	3.65	< 3.59	3.59	< 3.63	3.63	< 3.68	3.68
Chromium	6010B	mg/kg	17.6	2.66	10.7	2.63	14.6	2.77	15	2.56	23.4	2.71	21.9	2.81
Lead	6010B	mg/kg	15.9	0.887	12.2	0.876	13	0.923	11.8	0.854	18.6	0.904	11.8	0.937
pH	9045C	SU	5.02	--	5.87	--	6	--	6.12	--	6.03	--	5.93	--

Sample ID			HH1		J3A		L4A		M2A		N1A		N3A	
Sample Date			06/20/07		06/20/07		06/20/07		06/20/07		06/20/07		06/20/07	
Sample Time			12:30		8:30		8:45		9:00		9:15		9:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12.6	5.89	11.5	5.99	15.2	6.11	18.3	5.6	11.1	5.58	12.1	5.92
Ammonia, Extractable	350.1	mg/kg	< 1.21	1.21	< 1.2	1.2	3.8	1.25	3.37	1.14	< 1.17	1.17	< 1.18	1.18
Aluminum	6010B	mg/kg	< 3.62	3.62	< 3.61	3.61	< 3.74	3.74	< 3.41	3.41	< 3.5	3.5	< 3.53	3.53
Chromium	6010B	mg/kg	16.1	2.61	20.2	2.56	16.9	2.63	28.9	2.37	20.7	2.68	13	2.68
Lead	6010B	mg/kg	8.83	0.869	13.9	0.852	17.5	0.878	14	0.79	18.1	0.892	10.7	0.893
pH	9045C	SU	4.92	--	7.37	--	6.75	--	6.63	--	6.02	--	7.62	--

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Aerojet Facility
Orange County, Virginia

Sample ID			**O4A**		**Q2A**		**S3A**		**T1A**		**T4A**		**U2A**	
Sample Date			**06/20/07**		**06/20/07**		**06/20/07**		**06/20/07**		**06/20/07**		**06/20/07**	
Sample Time			**9:45**		**10:00**		**10:15**		**10:30**		**10:45**		**11:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	13.8	5.74	14.7	5.85	13.9	5.76	14.4	5.74	18.5	5.8	14.4	6.15
Ammonia, Extractable	350.1	mg/kg	< 1.15	1.15	3	1.18	3.56	1.16	1.87	1.15	5.57	1.17	5.75	1.26
Aluminum	6010B	mg/kg	5.24	3.46	< 3.54	3.54	< 3.48	3.48	< 3.45	3.45	< 3.5	3.5	< 3.79	3.79
Chromium	6010B	mg/kg	25.5	2.53	18.9	2.51	20.5	2.58	26.9	2.66	16.1	2.56	15.4	2.77
Lead	6010B	mg/kg	14.7	0.842	11	0.836	14	0.86	13.6	0.888	13.9	0.854	10.6	0.923
pH	9045C	SU	6.49	--	6.47	--	7.73	--	5.73	--	6.62	--	6.1	--

Sample ID			**V4A**		**V4B**		**W3A**		**Y2A**		**Z1A**		**Z4A**	
Sample Date			**06/20/07**		**06/20/07**		**06/20/07**		**06/20/07**		**06/20/07**		**06/20/07**	
Sample Time			**11:15**		**11:20**		**11:30**		**11:45**		**12:00**		**12:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	15.6	5.94	14.8	6.24	20.1	6.21	25.5	5.77	36.6	5.89	16.5	5.59
Ammonia, Extractable	350.1	mg/kg	3.95	1.2	2.8	1.27	6.51	1.26	5.5	1.18	21.4	1.19	3.68	1.12
Aluminum	6010B	mg/kg	< 3.6	3.6	< 3.81	3.81	< 3.78	3.78	< 3.55	3.55	< 7.14	7.14	< 3.36	3.36
Chromium	6010B	mg/kg	15	2.72	16.5	2.82	33.7	2.76	33.2	2.61	26.5	2.53	28.4	2.34
Lead	6010B	mg/kg	13.2	0.905	13	0.94	14.9	0.921	18	0.87	12.2	0.844	15.6	0.781
pH	9045C	SU	5.92	--	5.97	--	6.44	--	6.42	--	5.46	--	5.49	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**	
Sample Time			**6:30**		**13:00**		**6:45**		**7:00**		**7:15**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12.4	5.89	7.4	5.7	16.9	5.78	29.6	5.64	11.7	5.71	12.9	6.06
Ammonia, Extractable	350.1	mg/kg	7.33	1.19	< 1.16	1.16	13.7	1.19	5.42	1.16	3.75	1.16	5.9	1.22
Aluminum	6010B	mg/kg	< 3.58	3.58	70.8	3.48	13.1	3.56	< 3.48	3.48	< 3.47	3.47	84.8	3.65
Chromium	6010B	mg/kg	28.2	2.7	13.7	2.35	11.3	2.7	25.9	2.64	11.3	2.63	16.1	2.48
Lead	6010B	mg/kg	14.8	0.899	8.88	0.783	10	0.899	19.7	0.879	12.1	0.875	18.8	0.828
pH	9045C	SU	7.53	--	4.97	--	6.65	--	6.36	--	6.12	--	4.95	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**	
Sample Time			**12:45**		**7:30**		**7:45**		**7:50**		**8:00**		**8:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.83	5.83	14.2	6.55	15.9	5.72	15.6	5.95	14.3	5.98	20.4	5.87
Ammonia, Extractable	350.1	mg/kg	< 1.19	1.19	2.56	1.32	5.43	1.15	10.9	1.2	3.99	1.21	2.83	1.21
Aluminum	6010B	mg/kg	421	3.57	< 3.96	3.96	< 3.45	3.45	6.67	3.61	< 7.28	7.28	< 3.62	3.62
Chromium	6010B	mg/kg	19.3	2.71	14.1	3.04	27.6	2.56	14	2.8	19.5	2.74	17.2	2.63
Lead	6010B	mg/kg	16.2	0.904	11.9	1.01	14.5	0.853	11.3	0.934	13.2	0.913	10.7	0.877
pH	9045C	SU	4.9	--	6.02	--	5.99	--	6.17	--	6.73	--	7.02	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**	
Sample Time			**12:30**		**8:30**		**8:45**		**9:00**		**9:15**		**9:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.07	5.65	16.2	5.89	16.5	6.73	13	5.82	17.7	6.15	12.9	5.94
Ammonia, Extractable	350.1	mg/kg	1.79	1.15	4.73	1.19	2.53	1.35	4.87	1.18	4.76	1.25	2.09	1.2
Aluminum	6010B	mg/kg	79	3.45	< 3.56	3.56	< 4.06	4.06	< 3.53	3.53	< 3.76	3.76	< 3.61	3.61
Chromium	6010B	mg/kg	9.97	2.43	14.2	2.71	18.6	3.08	16	2.46	25.5	2.83	19	2.78
Lead	6010B	mg/kg	7.83	0.811	11.6	0.905	19.8	1.03	13.4	0.821	13.2	0.944	18.3	0.926
pH	9045C	SU	4.97	--	6.56	--	6.7	--	6.93	--	6.25	--	6.85	--

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**	
Sample Time			**9:45**		**10:00**		**10:15**		**10:30**		**10:45**		**11:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	22.4	5.87	18.8	6.3	10.5	6.04	14.5	6.02	9.28	5.94	12.4	5.86
Ammonia, Extractable	350.1	mg/kg	8.3	1.18	2.06	1.27	3.25	1.21	3.89	1.23	1.82	1.19	4.72	1.18
Aluminum	6010B	mg/kg	< 3.54	3.54	< 3.81	3.81	< 3.64	3.64	< 3.7	3.7	< 3.57	3.57	< 3.53	3.53
Chromium	6010B	mg/kg	17.6	2.72	24.3	2.71	20.2	2.62	28.9	2.7	20.9	2.72	13.8	2.7
Lead	6010B	mg/kg	14	0.908	13.7	0.902	12.3	0.873	16.9	0.9	13.7	0.908	11.7	0.899
pH	9045C	SU	5.79	--	5.91	--	7.33	--	5.75	--	7.33	--	6.32	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**		**07/31/07**	
Sample Time			**11:15**		**11:20**		**11:30**		**11:45**		**12:00**		**12:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12	6.1	16.9	5.85	17	5.89	11.9	5.82	17.8	5.88	13.6	5.87
Ammonia, Extractable	350.1	mg/kg	4.6	1.23	6.29	1.18	4.91	1.19	3.38	1.18	5.16	1.19	4.63	1.19
Aluminum	6010B	mg/kg	< 3.69	3.69	< 3.54	3.54	< 3.57	3.57	< 3.55	3.55	14.7	7.12	< 3.56	3.56
Chromium	6010B	mg/kg	18.1	2.74	14.8	2.69	14.1	2.68	32.3	2.73	21.5	2.64	20.4	2.66
Lead	6010B	mg/kg	11.1	0.914	10.3	0.896	10.2	0.894	13.5	0.911	14.5	0.879	15.3	0.885
pH	9045C	SU	6.39	--	6.29	--	6.67	--	6.36	--	5.51	--	5.46	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

August 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			A2A		A4A		AA1		B3A		B4A		DD1	
Sample Date			08/29/07		08/29/07		08/29/07		08/29/07		08/29/07		08/29/07	
Sample Time			6:30		6:45		13:00		7:00		7:15		13:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.3	6.03	7.85	5.76	9.6	6.15	9.46	5.85	14.4	6.34	19.4	6.31
Ammonia, Extractable	350.1	mg/kg	3.35	1.24	< 1.18	1.18	< 1.24	1.24	1.53	1.21	3.52	1.3	3.77	1.27
Aluminum	6010B	mg/kg	< 3.71	3.71	< 3.55	3.55	73.7	3.73	< 3.63	3.63	< 3.89	3.89	81.5	3.81
Chromium	6010B	mg/kg	19.3	2.79	17.8	2.65	21.6	2.77	13.6	2.74	26.2	3	15.8	2.74
Lead	6010B	mg/kg	11	0.931	11.1	0.884	12.2	0.922	12.3	0.912	15	0.999	15.3	0.914
pH	9045C	SU	6.89	--	7.85	--	4.91	--	6.01	--	6.52	--	4.88	--

Sample ID			EE1		F1A		F4A		G3A		G3B		H2A	
Sample Date			08/29/07		08/29/07		08/29/07		08/29/07		08/29/07		08/29/07	
Sample Time			12:45		7:30		7:45		8:00		8:05		8:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.05	6.05	11.4	6.14	16.3	6.43	16.1	5.93	21.3	5.87	13.5	6.33
Ammonia, Extractable	350.1	mg/kg	1.85	1.22	< 1.24	1.24	< 1.29	1.29	16.3	1.21	8.09	1.18	1.42	1.27
Aluminum	6010B	mg/kg	388	3.66	< 3.71	3.71	< 3.88	3.88	< 3.63	3.63	< 3.54	3.54	< 3.82	3.82
Chromium	6010B	mg/kg	18.3	2.85	9.36	2.67	18.2	2.85	19.1	2.79	26.6	2.6	10.8	2.98
Lead	6010B	mg/kg	15.1	0.948	11.4	0.89	11.4	0.951	13.3	0.93	13.9	0.867	11.8	0.992
pH	9045C	SU	5.31	--	5.97	--	6.72	--	6.01	--	6	--	6.28	--

Sample ID			HH1		I4A		J2A		L1A		L3A		N2A	
Sample Date			08/29/07		08/29/07		08/29/07		08/29/07		08/29/07		08/29/07	
Sample Time			12:30		8:30		8:45		9:00		9:15		9:45	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.42	6.1	19.5	6.44	13.3	6.42	13.6	6.22	7.79	6.11	9.97	6.22
Ammonia, Extractable	350.1	mg/kg	1.3	1.21	2.55	1.32	3.55	1.31	2.55	1.25	3.1	1.2	< 1.25	1.25
Aluminum	6010B	mg/kg	115	3.62	9.9	3.96	< 3.92	3.92	< 3.76	3.76	13.5	7.17	< 3.76	3.76
Chromium	6010B	mg/kg	10.6	2.78	21.1	3.04	8.37	2.85	20.7	2.58	8.65	2.58	14.5	2.63
Lead	6010B	mg/kg	14.5	0.927	18.9	1.01	11.1	0.949	17.3	0.859	8.55	0.859	13.9	0.875
pH	9045C	SU	4.99	--	6.3	--	6.56	--	6.07	--	6.72	--	6.06	--

August 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O1A**		**O3A**		**P4A**		**S2A**		**S4A**		**T3A**	
Sample Date			**08/29/07**		**08/29/07**		**08/29/07**		**08/29/07**		**08/29/07**		**08/29/07**	
Sample Time			**10:00**		**10:15**		**10:30**		**10:45**		**11:00**		**11:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	15.3	6.15	12.4	5.95	15.5	7.56	18	6.06	17.7	6.09	10.8	6.02
Ammonia, Extractable	350.1	mg/kg	4.9	1.25	3.07	1.2	2.76	1.5	10.3	1.22	4.48	1.2	1.89	1.22
Aluminum	6010B	mg/kg	7.76	3.75	< 3.6	3.6	< 4.51	4.51	< 3.66	3.66	< 3.6	3.6	< 3.65	3.65
Chromium	6010B	mg/kg	30.7	2.7	20.3	2.79	20.3	3.53	86.8	2.82	8.4	2.79	49.8	2.8
Lead	6010B	mg/kg	13.6	0.9	13.3	0.93	12.9	1.18	23.1	0.939	10.3	0.93	19.2	0.935
pH	9045C	SU	5.7	--	5.71	--	6.33	--	6.35	--	6.14	--	6.33	--

Sample ID			**U1A**		**X4A**		**Y3A**		**Y3B**		**Z2A**	
Sample Date			**08/29/07**		**08/29/07**		**08/29/07**		**08/29/07**		**08/29/07**	
Sample Time			**11:30**		**11:45**		**12:00**		**12:05**		**12:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.8	5.94	9.94	5.89	38.7	6.22	20.6	6.2	21.3	5.95
Ammonia, Extractable	350.1	mg/kg	8.68	1.23	1.39	1.19	19.9	1.27	9.15	1.24	2.72	1.2
Aluminum	6010B	mg/kg	< 3.68	3.68	163	3.56	< 3.82	3.82	5.45	3.72	3.69	3.61
Chromium	6010B	mg/kg	23.9	2.62	10.7	2.69	32.3	2.92	28.8	2.78	22	2.8
Lead	6010B	mg/kg	12.6	0.873	7.41	0.896	19.2	0.973	21.1	0.926	14.6	0.932
pH	9045C	SU	5.58	--	4.71	--	6.24	--	6.2	--	5.72	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

September 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			A3A		AA1		B1A		D2A		DD1		E4A	
Sample Date			09/26/07		09/26/07		09/26/07		09/26/07		09/26/07		09/26/07	
Sample Time			6:30		13:00		6:45		7:00		13:15		7:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	15.4	5.56	11.7	5.47	16.7	5.22	17.1	5.21	17.8	5.89	20.8	5.33
Ammonia, Extractable	350.1	mg/kg	5.12	1.08	< 1.13	1.13	5	1.06	3.7	1.08	4.99	1.21	6.96	1.09
Aluminum	6010B	mg/kg	< 3.25	3.25	121	3.38	< 3.18	3.18	< 3.25	3.25	164	3.62	< 3.28	3.28
Chromium	6010B	mg/kg	18.9	2.5	21.8	2.58	9.27	2.39	12.2	2.31	24.8	2.72	22.4	2.43
Lead	6010B	mg/kg	10.1	0.834	11.2	0.861	9.79	0.795	11.8	0.769	15.6	0.907	11.9	0.81
pH	9045C	SU	7.41	--	4.91	--	6.08	--	5.82	--	4.77	--	6.36	--

Sample ID			EE1		F3A		G2A		G2B		H1A		H4A	
Sample Date			09/26/07		09/26/07		09/26/07		09/26/07		09/26/07		09/26/07	
Sample Time			12:45		7:30		7:45		7:50		8:00		8:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	6.02	5.58	22.4	5.57	15.2	6	15.3	5.71	16.6	5.58	23.7	5.72
Ammonia, Extractable	350.1	mg/kg	< 1.13	1.13	8.58	1.07	3.49	1.1	8.03	1.1	4.12	1.09	7.12	1.11
Aluminum	6010B	mg/kg	432	3.39	< 3.2	3.2	< 3.29	3.29	< 3.3	3.3	< 3.26	3.26	< 3.33	3.33
Chromium	6010B	mg/kg	21.6	2.57	9.93	2.46	16.3	2.54	32.4	2.54	19.5	2.4	24.7	2.51
Lead	6010B	mg/kg	16	0.858	10.8	0.821	13	0.848	20.3	0.845	12.5	0.799	10.4	0.836
pH	9045C	SU	4.92	--	5.6	--	6.21	--	6.23	--	5.91	--	5.79	--

Sample ID			HH1		J3A		L4A		M2A		N1A		N3A	
Sample Date			09/26/07		09/26/07		09/26/07		09/26/07		09/26/07		09/26/07	
Sample Time			12:30		8:30		8:45		9:00		9:15		9:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	39.6	5.15	11.2	5.76	26.1	5.39	21.5	5.15	9.49	6.22	17.5	5.22
Ammonia, Extractable	350.1	mg/kg	15.3	1.06	2.03	1.11	1.81	1.14	4.97	1.08	< 1.14	1.14	< 1.08	1.08
Aluminum	6010B	mg/kg	123	3.18	8.61	3.32	< 3.43	3.43	< 3.23	3.23	< 3.41	3.41	< 3.25	3.25
Chromium	6010B	mg/kg	10.2	2.46	17.5	2.46	7.6	2.64	24.5	2.49	23.4	2.52	18.3	2.31
Lead	6010B	mg/kg	10.1	0.819	13.5	0.82	10	0.879	13.8	0.831	13.9	0.84	11.1	0.768
pH	9045C	SU	4.73	--	6.64	--	6.35	--	6.37	--	6.41	--	7.8	--

September 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O4A**		**Q2A**		**S3A**		**T1A**		**T4A**		**U2A**	
Sample Date			**09/26/07**		**09/26/07**		**09/26/07**		**09/26/07**		**09/26/07**		**09/26/07**	
Sample Time			**9:45**		**10:00**		**10:15**		**10:30**		**10:45**		**11:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	33.6	5.06	17.5	5.7	15.4	5.17	22.2	4.94	21.3	5.3	11.3	6.03
Ammonia, Extractable	350.1	mg/kg	11.3	1.06	< 1.17	1.17	< 1.09	1.09	5.9	1.08	4.09	1.07	< 1.22	1.22
Aluminum	6010B	mg/kg	4.91	3.18	< 3.52	3.52	< 3.26	3.26	< 3.23	3.23	< 3.22	3.22	< 3.67	3.67
Chromium	6010B	mg/kg	41	2.41	20.2	2.52	33.2	2.5	25.3	2.49	15.9	2.48	19.5	2.8
Lead	6010B	mg/kg	16.1	0.804	9.09	0.839	14	0.835	14.7	0.829	12.8	0.826	11	0.935
pH	9045C	SU	5.74	--	6.81	--	7.51	--	5.8	--	6.35	--	5.34	--

Sample ID			**V4A**		**V4B**		**W3A**		**Y2A**		**Z1A**		**Z4A**	
Sample Date			**09/26/07**		**09/26/07**		**09/26/07**		**09/26/07**		**09/26/07**		**09/26/07**	
Sample Time			**11:15**		**11:20**		**11:30**		**11:45**		**12:00**		**12:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	< 3.31	3.31	< 3.3	3.3	< 3.26	3.26	< 3.2	3.2	< 3.21	3.21	< 3.21	3.21
Ammonia	350.1	mg/kg	15.4	5.37	13.3	5.42	13.8	5.42	24.1	5.02	22.7	4.94	25	5.19
Ammonia, Extractable	350.1	mg/kg	< 1.1	1.1	< 1.1	1.1	< 1.09	1.09	5.33	1.07	7.92	1.07	6.29	1.07
Aluminum	6010B	mg/kg	< 3.31	3.31	< 3.3	3.3	< 3.26	3.26	< 3.2	3.2	< 3.21	3.21	< 3.21	3.21
Chromium	6010B	mg/kg	11.6	2.4	22.3	2.56	20.2	2.48	20.6	2.43	27.9	2.39	16.1	2.39
Lead	6010B	mg/kg	11.3	0.801	13.5	0.854	13.1	0.828	14.3	0.809	13.3	0.796	12.1	0.798
pH	9045C	SU	6.04	--	6.04	--	6.55	--	6.24	--	5.49	--	5.55	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

October 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			A1A		AA1		B2A		C4A		D3A		DD1	
Sample Date			**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**	
Sample Time			**7:00**		**13:30**		**7:15**		**0.3125**		**0.322916667**		**13:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.3	6.06	8.86	6.23	13.2	6.3	4.41	1.27	3.4	1.23	29.7	6.17
Ammonia, Extractable	350.1	mg/kg	5.95	1.23	1.35	1.25	4.59	1.26	< 3.82	3.82	11.8	3.7	3.45	1.24
Aluminum	6010B	mg/kg	< 3.69	3.69	72.8	3.75	< 7.55	7.55	19.6	6.31	14.7	6.1	124	3.73
Chromium	6010B	mg/kg	17.6	2.63	10.6	2.59	24.7	2.79	19.8	2.81	18.3	2.63	9.72	2.74
Lead	6010B	mg/kg	9.73	0.877	10.6	0.864	11.7	0.93	19.9	0.937	15.4	0.877	15.5	0.913
pH	9045C	SU	6.47	--	5.13	--	6	--	6	--	6.29	--	4.91	--

Sample ID			EE1		F2A		G1A		G1B		G4A		H3A	
Sample Date			**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**	
Sample Time			**13:15**		**8:00**		**8:15**		**8:20**		**8:30**		**8:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.96	5.96	13.4	6.65	14.3	6.06	15.9	5.94	15.5	6.25	10.2	6.15
Ammonia, Extractable	350.1	mg/kg	1.28	1.22	3.36	1.34	2.88	1.22	3.48	1.2	2.63	1.25	4.6	1.24
Aluminum	6010B	mg/kg	410	3.65	< 4.03	4.03	< 3.65	3.65	< 3.6	3.6	< 3.75	3.75	< 3.72	3.72
Chromium	6010B	mg/kg	20.1	2.48	23.5	2.99	12.4	2.66	9.38	2.57	17.9	2.78	19.2	2.61
Lead	6010B	mg/kg	16.2	0.826	14.5	0.995	12	0.885	12.7	0.858	12.2	0.928	9.62	0.87
pH	9045C	SU	5.05	--	5.82	--	5.77	--	5.86	--	6.06	--	6.53	--

Sample ID			HH1		K4A		L2A		M1A		M3A		N4A	
Sample Date			**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**	
Sample Time			**13:00**		**9:00**		**9:15**		**9:30**		**9:45**		**10:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.61	6.09	14.6	6.45	114	6.76	7.58	5.79	17.8	6.21	10	6.16
Ammonia, Extractable	350.1	mg/kg	2.34	1.24	4.08	1.31	5.86	1.36	2.73	1.19	4.36	1.27	2.1	1.24
Aluminum	6010B	mg/kg	91.8	3.71	< 3.92	3.92	22.5	8.17	< 3.57	3.57	< 3.8	3.8	< 3.71	3.71
Chromium	6010B	mg/kg	10.8	2.72	22.2	2.75	18.5	2.97	14.8	2.55	21	2.76	14.9	2.73
Lead	6010B	mg/kg	8.2	0.907	12.9	0.917	19.5	0.991	11.7	0.851	13	0.921	9.57	0.909
pH	9045C	SU	5	--	6.07	--	5.37	--	6.24	--	5.86	--	6.41	--

October 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**	
Sample Time			**10:15**		**10:30**		**10:45**		**11:00**		**11:15**		**11:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	13.8	6.05	13.1	6.45	10	5.98	13.9	5.96	7.23	6.02	11.5	5.95
Ammonia, Extractable	350.1	mg/kg	4.64	1.21	3.69	1.3	1.58	1.22	3.09	1.21	2.63	1.21	2.9	1.22
Aluminum	6010B	mg/kg	< 3.64	3.64	< 3.89	3.89	< 3.65	3.65	< 7.27	7.27	< 3.62	3.62	< 3.66	3.66
Chromium	6010B	mg/kg	25.9	2.57	20.1	2.76	18.3	2.69	15.2	2.69	24.9	2.59	21.8	2.71
Lead	6010B	mg/kg	15.9	0.855	13.5	0.919	11.3	0.895	11.9	0.898	14.1	0.863	11	0.904
pH	9045C	SU	6.04	--	5.89	--	7.33	--	5.69	--	7.07	--	6.01	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**		**10/31/07**	
Sample Time			**11:45**		**11:50**		**12:00**		**12:15**		**12:30**		**12:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.1	6.1	14.3	5.91	19.1	6.36	13	5.91	18.7	6.06	26.5	5.98
Ammonia, Extractable	350.1	mg/kg	3.96	1.22	4.9	1.23	5.99	1.3	3.27	1.2	6.07	1.25	8.53	1.21
Aluminum	6010B	mg/kg	< 3.67	3.67	< 3.68	3.68	< 3.89	3.89	< 3.61	3.61	< 3.74	3.74	< 3.63	3.63
Chromium	6010B	mg/kg	15.7	2.5	14.9	2.55	15.3	2.89	22.1	2.47	20.7	2.75	15.8	2.49
Lead	6010B	mg/kg	10.7	0.834	10.6	0.851	14	0.962	10.5	0.824	15.8	0.917	14.5	0.828
pH	9045C	SU	6.22	--	6.16	--	6.28	--	6.5	--	5.71	--	5.45	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

November 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A2A**		**A4A**		**AA1**		**B3A**		**B4A**		**DD1**	
Sample Date			**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**	
Sample Time			**6:30**		**6:45**		**13:00**		**7:00**		**7:15**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.23	5.68	6.89	5.73	8.66	6.17	8.4	5.64	18.3	6.23	13.8	6.27
Ammonia, Extractable	350.1	mg/kg	2.3	1.21	< 1.18	1.18	< 1.25	1.25	2.83	1.23	3.11	1.25	5.12	1.28
Aluminum	6010B	mg/kg	< 3.63	3.63	< 3.54	3.54	60.7	3.74	< 3.7	3.7	< 3.75	3.75	140	3.85
Chromium	6010B	mg/kg	40.2	2.75	13.6	2.56	13.5	2.87	14.3	2.82	16.5	2.9	12.9	2.94
Lead	6010B	mg/kg	16.3	0.916	9.71	0.854	13.6	0.957	12.9	0.94	13.5	0.966	14	0.979
pH	9045C	SU	7.56	--	7.47	--	4.77	--	6.63	--	6.9	--	4.91	--

Sample ID			**EE1**		**F1A**		**F4A**		**F4B**		**G3A**		**H2A**	
Sample Date			**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**	
Sample Time			**12:45**		**7:30**		**7:45**		**7:50**		**8:00**		**8:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	13.1	6.06	12.9	5.99	29	6.24	12.3	6.29	16.8	6.06	10.8	5.93
Ammonia, Extractable	350.1	mg/kg	< 1.24	1.24	3	1.19	1.66	1.28	1.28	1.27	32.5	1.25	8.54	1.24
Aluminum	6010B	mg/kg	417	3.72	< 3.6	3.6	< 3.83	3.83	< 3.8	3.8	< 3.76	3.76	< 3.73	3.73
Chromium	6010B	mg/kg	29.9	2.82	14.3	2.67	22.2	2.71	26.2	2.76	17.8	2.83	20.7	2.87
Lead	6010B	mg/kg	14.5	0.941	13.6	0.891	11.4	0.902	14	0.922	10.2	0.945	16.3	0.956
pH	9045C	SU	4.88	--	5.73	--	6.46	--	6.62	--	5.94	--	6.07	--

Sample ID			**HH1**		**I4A**		**J2A**		**L1A**		**L3A**		**M4A**	
Sample Date			**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**	
Sample Time			**12:30**		**8:30**		**8:45**		**9:00**		**9:15**		**9:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.12	6.12	15.7	6.28	9	6.31	15.9	6.11	11.4	6.18	7.56	6.2
Ammonia, Extractable	350.1	mg/kg	1.28	1.23	3.88	1.28	15.3	1.29	5.2	1.23	< 1.24	1.24	< 1.27	1.27
Aluminum	6010B	mg/kg	104	3.68	< 3.85	3.85	< 3.86	3.86	< 3.7	3.7	< 3.73	3.73	< 3.8	3.8
Chromium	6010B	mg/kg	15.1	2.84	15.1	2.83	15.6	2.97	12	2.82	13.4	2.55	16.1	2.77
Lead	6010B	mg/kg	9.62	0.947	13.5	0.944	14.8	0.991	12.5	0.941	11.2	0.849	14.4	0.925
pH	9045C	SU	4.93	--	6.47	--	6.61	--	6.11	--	6.34	--	5.68	--

November 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**N2A**		**O1A**		**O3A**		**P4A**		**S2A**		**S4A**	
Sample Date			**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**	
Sample Time			**9:45**		**10:00**		**10:15**		**10:30**		**10:45**		**11:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.32	6.32	12.1	6.03	10.1	5.99	14.1	6.08	14.2	6.12	10.8	6.17
Ammonia, Extractable	350.1	mg/kg	< 1.3	1.3	5.59	1.23	2.77	1.22	1.94	1.22	1.68	1.22	5.37	1.25
Aluminum	6010B	mg/kg	< 3.89	3.89	< 3.68	3.68	< 3.67	3.67	< 3.66	3.66	< 3.66	3.66	< 3.74	3.74
Chromium	6010B	mg/kg	29.4	2.87	39	2.59	28.1	2.83	25.8	2.54	29.1	2.76	10.8	2.63
Lead	6010B	mg/kg	16.9	0.955	17.7	0.864	15.8	0.943	14.1	0.847	17.9	0.921	11.5	0.876
pH	9045C	SU	6.06	--	6.2	--	5.71	--	6.48	--	7.11	--	6.51	--

Sample ID			**T3A**		**T3B**		**U1A**		**X4A**		**Y3A**		**Z2A**	
Sample Date			**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**		**11/28/07**	
Sample Time			**11:15**		**11:20**		**11:30**		**11:45**		**12:00**		**12:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.99	5.99	< 6.17	6.17	7.88	6.07	6.87	5.89	13.3	6.32	11	6.15
Ammonia, Extractable	350.1	mg/kg	1.45	1.23	1.84	1.23	2.92	1.23	< 1.2	1.2	3.32	1.27	4.17	1.24
Aluminum	6010B	mg/kg	< 3.68	3.68	< 3.7	3.7	< 3.69	3.69	158	3.61	< 3.81	3.81	< 3.72	3.72
Chromium	6010B	mg/kg	24.5	2.76	23.5	2.75	29.4	2.81	12.9	2.76	33.8	2.91	46.4	2.86
Lead	6010B	mg/kg	15.5	0.919	12.4	0.915	21.9	0.938	8.85	0.92	23	0.969	18.8	0.954
pH	9045C	SU	5.84	--	5.73	--	5.25	--	4.78	--	5.98	--	5.68	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

December 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A3A**		**AA1**		**B1A**		**D2A**		**DD1**		**E4A**	
Sample Date			**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**	
Sample Time			**6:45**		**13:15**		**7:00**		**7:15**		**13:30**		**7:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.32	6.32	< 6.5	6.5	20.3	6.72	12.7	6.51	6.65	6.44	8.98	6.29
Ammonia, Extractable	350.1	mg/kg	< 1.27	1.27	< 1.31	1.31	7.65	1.35	4.97	1.31	1.35	1.32	< 1.29	1.29
Aluminum	6010B	mg/kg	< 3.82	3.82	89.6	3.94	< 4.06	4.06	< 3.92	3.92	112	3.96	14.6	7.72
Chromium	6010B	mg/kg	39.6	2.9	14.9	3.05	13	3.08	11.6	2.97	27.9	2.96	13.4	2.93
Lead	6010B	mg/kg	15.5	0.968	15.1	1.02	10.9	1.03	14.1	0.991	27.4	0.986	10.9	0.977
pH	9045C	SU	8.87	--	5.56	--	7.56	--	6.13	--	4.87	--	6.5	--

Sample ID			**EE1**		**F3A**		**G2A**		**G2B**		**H1A**		**H4A**	
Sample Date			**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**	
Sample Time			**13:00**		**7:45**		**8:00**		**8:05**		**8:15**		**8:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.27	6.27	12.3	6.11	29.9	6.43	21.7	6.54	10.1	6.39	15.5	6.41
Ammonia, Extractable	350.1	mg/kg	< 1.28	1.28	3.97	1.25	4.71	1.29	4.79	1.3	28	1.28	3.65	1.3
Aluminum	6010B	mg/kg	401	3.83	6.51	3.75	< 7.77	7.77	< 3.91	3.91	< 3.84	3.84	< 7.82	7.82
Chromium	6010B	mg/kg	23.3	2.95	10.3	2.84	21.8	2.63	34.7	2.97	24.4	2.89	35.4	2.88
Lead	6010B	mg/kg	16	0.982	11.9	0.948	15.6	0.877	15.2	0.991	14.9	0.964	12.3	0.96
pH	9045C	SU	5.65	--	6.17	--	6.49	--	6.54	--	6.16	--	6.39	--

Sample ID			**HH1**		**J3A**		**L4A**		**M2A**		**N1A**		**N3A**	
Sample Date			**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**	
Sample Time			**12:45**		**8:45**		**9:00**		**9:15**		**9:30**		**9:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.29	6.29	10.2	6.37	< 6.4	6.4	18.6	6.16	< 6.61	6.61	9.69	6.58
Ammonia, Extractable	350.1	mg/kg	< 1.24	1.24	13.9	1.27	< 1.3	1.3	2.46	1.26	< 1.33	1.33	< 1.32	1.32
Aluminum	6010B	mg/kg	86	3.73	8.1	3.82	< 3.89	3.89	< 3.78	3.78	< 3.98	3.98	< 3.96	3.96
Chromium	6010B	mg/kg	11.4	2.76	40.9	2.57	14	2.82	25.6	2.88	30.9	2.92	14.1	2.98
Lead	6010B	mg/kg	7.65	0.922	19.3	0.856	11.7	0.941	18.4	0.959	19.2	0.975	8.74	0.994
pH	9045C	SU	5.59	--	6.5	--	6.08	--	6.21	--	5.73	--	7.43	--

December 2007
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O4A**		**Q2A**		**S3A**		**T1A**		**T4A**		**U2A**	
Sample Date			**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**	
Sample Time			**10:00**		**10:15**		**10:30**		**10:45**		**11:00**		**11:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	18.2	6.41	6.2	6.19	< 6.43	6.43	6.5	6.16	< 6.26	6.26	< 6.09	6.09
Ammonia, Extractable	350.1	mg/kg	13.5	1.29	< 1.26	1.26	< 1.29	1.29	2.64	1.24	< 1.26	1.26	< 1.23	1.23
Aluminum	6010B	mg/kg	< 3.87	3.87	< 3.77	3.77	< 3.88	3.88	< 3.73	3.73	< 3.77	3.77	< 3.7	3.7
Chromium	6010B	mg/kg	18.5	2.87	16	2.91	23.5	2.84	25.3	2.9	12.6	2.66	17.3	2.86
Lead	6010B	mg/kg	14.7	0.956	9.61	0.969	13.7	0.946	14.6	0.965	13.3	0.886	10.1	0.953
pH	9045C	SU	5.84	--	6.63	--	7.41	--	5.82	--	6.69	--	7.45	--

Sample ID			**V4A**		**V4B**		**W3A**		**Y2A**		**Z1A**		**Z4A**	
Sample Date			**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**		**12/17/07**	
Sample Time			**11:30**		**11:35**		**11:45**		**12:00**		**12:15**		**12:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.2	6.36	9.28	6.33	8.24	6.55	19.3	6.67	17.2	6.77	11.9	6.6
Ammonia, Extractable	350.1	mg/kg	< 1.26	1.26	< 1.27	1.27	< 1.33	1.33	7.14	1.36	11.4	1.36	< 1.34	1.34
Aluminum	6010B	mg/kg	< 3.77	3.77	6.59	3.82	< 4	4	8.04	4.09	< 4.07	4.07	< 8.04	8.04
Chromium	6010B	mg/kg	12.3	2.95	20.1	2.94	20.7	2.99	23.4	3.11	35.8	3.11	26.2	3.01
Lead	6010B	mg/kg	12.6	0.985	16.4	0.98	12.8	0.996	14.6	1.04	20.6	1.04	17.4	1
pH	9045C	SU	7.17	--	6.81	--	6.74	--	6.67	--	6.12	--	6.15	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

January 2008
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**	
Sample Time			**6:30**		**13:15**		**6:45**		**7:15**		**7:30**		**13:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.41	6.12	< 6.26	6.26	11.3	6.36	11.7	6.69	16.8	6.25	14.1	6.49
Ammonia, Extractable	350.1	mg/kg	< 1.26	1.26	< 1.26	1.26	1.95	1.28	2.77	1.34	4.13	1.25	2.25	1.32
Aluminum	6010B	mg/kg	< 3.77	3.77	78.4	3.77	< 3.83	3.83	< 4.02	4.02	< 3.76	3.76	151	3.96
Chromium	6010B	mg/kg	25.8	2.87	16.2	2.78	21.6	2.69	25.4	3.1	19.9	2.75	12.1	3.04
Lead	6010B	mg/kg	13.7	0.958	9.78	0.927	11.1	0.898	16.9	1.03	13.3	0.917	13.1	1.01
pH	9045C	SU	6.7	--	4.78	--	6.15	--	5.89	--	5.82	--	4.91	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**	
Sample Time			**13:00**		**7:45**		**8:00**		**8:05**		**8:15**		**8:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.1	6.1	7.27	6.49	7.54	6.14	10.5	6.16	9.32	6.2	< 6.12	6.12
Ammonia, Extractable	350.1	mg/kg	< 1.23	1.23	4.79	1.32	< 1.25	1.25	< 1.25	1.25	< 1.26	1.26	< 1.25	1.25
Aluminum	6010B	mg/kg	405	3.69	< 3.97	3.97	< 3.75	3.75	< 3.74	3.74	< 3.79	3.79	< 3.74	3.74
Chromium	6010B	mg/kg	21.2	2.55	13.8	2.84	18.1	2.88	24.7	2.62	16.7	2.9	14.9	2.89
Lead	6010B	mg/kg	16.6	0.849	11.1	0.945	15.3	0.961	15.7	0.872	11.3	0.968	10.5	0.963
pH	9045C	SU	4.95	--	5.74	--	6.09	--	6.05	--	6.37	--	6.84	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**	
Sample Time			**12:45**		**8:45**		**9:00**		**9:15**		**9:30**		**9:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.11	6.11	9.41	6.28	11.1	6.86	< 5.77	5.77	11.9	6.35	7.33	6.05
Ammonia, Extractable	350.1	mg/kg	< 1.25	1.25	1.36	1.28	< 1.39	1.39	< 1.18	1.18	1.5	1.3	4.26	1.22
Aluminum	6010B	mg/kg	75.3	3.76	< 3.85	3.85	< 4.18	4.18	< 3.54	3.54	< 3.9	3.9	< 3.66	3.66
Chromium	6010B	mg/kg	9.98	2.72	23.7	2.65	20.5	2.92	19.3	2.45	41.7	3.01	19.5	2.69
Lead	6010B	mg/kg	6.66	0.906	14.1	0.884	18.3	0.974	13.2	0.817	15.2	1	12.1	0.897
pH	9045C	SU	4.92	--	6.44	--	5.43	--	6.85	--	5.96	--	6.5	--

January 2008
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**	
Sample Time			**10:00**		**10:15**		**10:30**		**10:45**		**11:00**		**11:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.36	6.1	10.3	6.54	6.43	6	10.5	6.42	8.56	6.14	12.1	6.2
Ammonia, Extractable	350.1	mg/kg	< 1.23	1.23	< 1.31	1.31	< 1.22	1.22	2.01	1.31	< 1.23	1.23	5.41	1.24
Aluminum	6010B	mg/kg	< 3.68	3.68	< 3.93	3.93	< 3.66	3.66	< 3.94	3.94	< 3.7	3.7	< 3.73	3.73
Chromium	6010B	mg/kg	23.1	2.65	23.7	2.88	23.4	2.54	24	2.95	43.9	2.82	26.9	2.85
Lead	6010B	mg/kg	14.5	0.884	12.6	0.959	12.4	0.848	15.7	0.984	17	0.938	10.8	0.949
pH	9045C	SU	6.25	--	5.86	--	7.25	--	5.82	--	7.09	--	5.86	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**		**01/28/08**	
Sample Time			**11:30**		**11:35**		**11:45**		**12:00**		**12:15**		**12:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.08	6.15	8.79	5.96	15.7	6.41	11.8	6.23	12.6	6.37	11.4	6.21
Ammonia, Extractable	350.1	mg/kg	< 1.24	1.24	1.76	1.22	4.17	1.29	3.37	1.27	3.98	1.28	2.85	1.25
Aluminum	6010B	mg/kg	< 3.72	3.72	< 3.65	3.65	< 3.86	3.86	< 3.82	3.82	< 3.84	3.84	< 3.74	3.74
Chromium	6010B	mg/kg	11	2.72	14	2.63	11.6	2.65	17	2.69	17.7	2.82	19.3	2.63
Lead	6010B	mg/kg	7.95	0.907	8.62	0.878	8.82	0.882	9.98	0.898	13.7	0.94	13.6	0.878
pH	9045C	SU	6.72	--	7.08	--	6.54	--	6.07	--	5.79	--	5.9	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

February 2008
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A2A**		**A4A**		**AA1**		**B3A**		**B4A**		**DD1**	
Sample Date			**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**	
Sample Time			**6:45**		**7:00**		**13:15**		**7:15**		**7:30**		**13:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	19.5	6.08	9.21	6.23	< 5.13	5.13	24.6	6.1	23.4	6.38	7.94	5.27
Ammonia, Extractable	350.1	mg/kg	4.71	1.26	< 1.24	1.24	< 1.3	1.3	9.58	1.33	31.5	1.32	2.42	1.3
Aluminum	6010B	mg/kg	< 3.77	3.77	< 3.71	3.71	51.4	3.91	< 3.98	3.98	< 3.95	3.95	178	3.89
Chromium	6010B	mg/kg	27.3	2.67	12.4	2.59	16.9	2.61	14.4	2.95	10.9	3	23.8	3
Lead	6010B	mg/kg	13.8	0.888	11.6	0.864	11	0.869	14.2	0.983	14.1	1	14.5	0.999
pH	9045C	SU	6.91	--	7.57	--	5.36	--	6.44	--	6.54	--	5.07	--

Sample ID			**EE1**		**F1A**		**F4A**		**F4B**		**G3A**		**H2A**	
Sample Date			**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**	
Sample Time			**13:00**		**7:45**		**8:00**		**8:05**		**8:15**		**8:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6	6	17.3	5.81	25.6	6.71	17.9	6.49	23.3	6.54	10.3	6.45
Ammonia, Extractable	350.1	mg/kg	< 1.24	1.24	3.05	1.25	128	6.57	3.61	1.32	4.04	1.31	3.8	1.31
Aluminum	6010B	mg/kg	403	3.72	< 3.76	3.76	< 3.94	3.94	< 3.96	3.96	< 3.94	3.94	< 3.93	3.93
Chromium	6010B	mg/kg	14.8	2.62	8.96	2.87	21.9	2.95	17.1	3.06	13.6	2.96	16.7	2.83
Lead	6010B	mg/kg	13	0.874	12.5	0.958	13.4	0.984	13.7	1.02	14	0.988	15.8	0.943
pH	9045C	SU	5.44	--	6.25	--	6.93	--	6.98	--	6.36	--	6.36	--

Sample ID			**HH1**		**I4A**		**J2A**		**L1A**		**L3A**		**M4A**	
Sample Date			**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**	
Sample Time			**12:45**		**8:45**		**9:00**		**9:15**		**9:30**		**9:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.5	5.77	18.6	6.84	62.8	6.4	10.9	6.21	8.6	6.71	6.28	5.95
Ammonia, Extractable	350.1	mg/kg	3.7	1.28	3.77	1.35	2.08	1.35	1.64	1.26	2.62	1.36	< 1.3	1.3
Aluminum	6010B	mg/kg	78	3.83	< 4.04	4.04	< 4.05	4.05	< 3.77	3.77	< 4.07	4.07	< 3.89	3.89
Chromium	6010B	mg/kg	17.1	2.86	26.4	3.01	18.8	2.94	20.2	2.74	10.4	2.88	22.6	3
Lead	6010B	mg/kg	8.38	0.954	17.7	1	16.4	0.981	17.2	0.913	12.3	0.959	13.3	0.999
pH	9045C	SU	5.64	--	6.76	--	6.87	--	6.01	--	7.61	--	6.41	--

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**N2A**		**O1A**		**O3A**		**P4A**		**S2A**		**S4A**	
Sample Date			**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**	
Sample Time			**10:00**		**10:15**		**10:30**		**10:45**		**11:00**		**11:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.91	5.91	10.3	6.51	21.5	6.3	12	5.78	10.1	5.76	18.1	4.7
Ammonia, Extractable	350.1	mg/kg	< 1.31	1.31	5.75	1.3	3.77	1.27	2.94	1.25	< 1.26	1.26	8.48	1.3
Aluminum	6010B	mg/kg	< 3.93	3.93	< 3.89	3.89	< 3.82	3.82	< 3.75	3.75	< 3.79	3.79	< 3.9	3.9
Chromium	6010B	mg/kg	26.6	2.83	42.7	2.9	31.5	2.82	23.9	2.61	14.1	2.7	10.8	3
Lead	6010B	mg/kg	17	0.943	16.2	0.967	16.9	0.939	15.5	0.869	12.5	0.898	12.2	0.999
pH	9045C	SU	6.33	--	6.08	--	6.17	--	6.43	--	6.62	--	6.05	--

Sample ID			**T3A**		**T3B**		**U1A**		**X4A**		**Y3A**		**Z2A**	
Sample Date			**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**		**02/28/08**	
Sample Time			**11:30**		**11:35**		**11:45**		**12:00**		**12:15**		**12:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.4	5.67	17.6	5.91	19.4	6.5	17.6	6.01	23.2	7.2	21	4.54
Ammonia, Extractable	350.1	mg/kg	3.41	1.27	2.18	1.26	5.55	1.36	3.78	1.23	2.98	1.35	9.28	1.31
Aluminum	6010B	mg/kg	< 3.8	3.8	< 3.79	3.79	< 4.08	4.08	185	3.7	< 8.11	8.11	< 3.94	3.94
Chromium	6010B	mg/kg	13	2.9	22.5	2.93	13.1	2.79	10.7	2.73	25.9	2.88	20.3	3.03
Lead	6010B	mg/kg	10.7	0.968	12.9	0.976	10.3	0.93	8.9	0.911	18.1	0.961	14.6	1.01
pH	9045C	SU	6.29	--	6.51	--	5.66	--	5.42	--	6.31	--	6.15	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

March 2008
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A3A**		**AA1**		**B1A**		**D2A**		**DD1**		**E4A**	
Sample Date			**03/27/08**		**03/27/08**		**03/27/08**		**03/27/08**		**03/27/08**		**03/27/08**	
Sample Time			**7:00**		**15:30**		**7:15**		**7:30**		**15:45**		**7:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	15	5.98	7.69	5.46	27.8	6.22	12.3	5.53	17	6.91	13.3	6.12
Ammonia, Extractable	350.1	mg/kg	1.97	1.21	2.59	1.29	10.4	1.29	2.95	1.21	4.34	1.25	4.06	1.22
Aluminum	6010B	mg/kg	4.01	3.63	77.2	3.87	< 3.88	3.88	< 3.63	3.63	82.2	3.76	< 3.67	3.67
Chromium	6010B	mg/kg	18.5	2.67	17.7	2.73	13.1	2.88	12.4	2.67	18.1	2.82	14	2.79
Lead	6010B	mg/kg	13.6	0.891	14.8	0.909	12.4	0.959	14	0.891	15.3	0.941	10.4	0.928
pH	9045C	SU	8.13	--	5.05	--	6.66	--	6.03	--	5.01	--	6.43	--

Sample ID			**EE1**		**F3A**		**G2A**		**G2B**		**H1A**		**H4A**	
Sample Date			**03/27/08**		**03/27/08**		**03/27/08**		**03/27/08**		**03/27/08**		**03/27/08**	
Sample Time			**15:15**		**8:00**		**8:15**		**8:20**		**8:30**		**8:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.1	5.1	23.6	5.8	17.5	6.18	23.9	6.46	15.6	6.12	23.8	6.04
Ammonia, Extractable	350.1	mg/kg	< 1.21	1.21	6.64	1.27	7.8	1.24	6.51	1.26	1.92	1.21	7.39	1.27
Aluminum	6010B	mg/kg	523	3.64	15.2	3.8	< 7.46	7.46	< 3.78	3.78	< 3.64	3.64	< 3.8	3.8
Chromium	6010B	mg/kg	22.6	2.72	11.3	2.73	24.9	2.86	19.7	2.86	16.5	2.8	18.4	2.94
Lead	6010B	mg/kg	16.8	0.905	14.2	0.911	16.3	0.952	14.5	0.953	14.1	0.933	11.8	0.979
pH	9045C	SU	5.1	--	6.02	--	6.11	--	6.15	--	6.17	--	5.92	--

Sample ID			**HH1**		**J3A**		**L4A**		**M2A**		**N1A**		**N3A**	
Sample Date			**03/27/08**		**03/27/08**		**03/27/08**		**03/27/08**		**03/27/08**		**03/27/08**	
Sample Time			**15:00**		**9:00**		**11:15**		**11:30**		**11:45**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.14	5.38	22	6.6	16.3	5.89	16.7	5.48	11.9	6.06	16.6	6.55
Ammonia, Extractable	350.1	mg/kg	2.2	1.21	6.38	1.32	2.06	1.25	1.36	1.18	< 1.21	1.21	2.25	1.23
Aluminum	6010B	mg/kg	83.3	3.62	< 3.95	3.95	< 3.75	3.75	< 3.54	3.54	< 3.64	3.64	< 3.68	3.68
Chromium	6010B	mg/kg	10.2	2.78	26.9	2.99	27.7	2.82	18.8	2.6	29.9	2.76	18.3	2.67
Lead	6010B	mg/kg	8.61	0.928	15.9	0.997	13.9	0.939	15	0.867	19.3	0.92	13.7	0.89
pH	9045C	SU	5.39	--	7.2	--	6.65	--	6.61	--	6.36	--	7.81	--

March 2008
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			O4A		Q2A		S3A		T1A		T4A		U2A	
Sample Date			03/27/08		03/27/08		03/27/08		03/27/08		03/27/08		03/27/08	
Sample Time			12:15		12:30		12:45		13:00		13:15		13:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	20.1	6.06	8.77	5.4	23.2	6.3	13.2	5.35	21.1	6.43	12.9	5.84
Ammonia, Extractable	350.1	mg/kg	1.51	1.2	2.55	1.24	6.32	1.26	3.77	1.2	4.89	1.27	8.44	1.22
Aluminum	6010B	mg/kg	< 3.59	3.59	< 3.72	3.72	< 3.77	3.77	< 3.6	3.6	< 3.8	3.8	< 3.65	3.65
Chromium	6010B	mg/kg	19.2	2.72	20.4	2.53	30.6	2.65	29.2	2.7	22.5	2.86	19.2	2.81
Lead	6010B	mg/kg	15.1	0.907	11.6	0.844	21	0.885	15.1	0.9	17.9	0.952	13.4	0.935
pH	9045C	SU	6.78	--	7.15	--	7.72	--	6.15	--	6.7	--	6.78	--

Sample ID			V4A		V4B		W3A		Y2A		Z1A		Z4A	
Sample Date			03/27/08		03/27/08		03/27/08		03/27/08		03/27/08		03/27/08	
Sample Time			13:45		13:50		14:00		14:15		14:30		14:45	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	17.8	6.23	14.1	6.2	19.9	6.14	22.8	6.6	11.4	6.13	15.4	5.87
Ammonia, Extractable	350.1	mg/kg	2.68	1.24	2.21	1.24	7.51	1.31	8.16	1.3	6.16	1.24	5.05	1.17
Aluminum	6010B	mg/kg	< 3.73	3.73	< 3.71	3.71	< 3.92	3.92	< 3.89	3.89	8.83	3.71	< 3.51	3.51
Chromium	6010B	mg/kg	14	2.81	23.9	2.51	20.5	2.89	21	2.97	26.6	2.65	25	2.63
Lead	6010B	mg/kg	13.7	0.935	14.4	0.837	14.6	0.962	15	0.99	14.1	0.885	14.6	0.876
pH	9045C	SU	6	--	6.09	--	6.98	--	6.68	--	5.59	--	6.14	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

April 2008
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**	
Sample Time			**7:00**		**13:30**		**7:15**		**7:30**		**7:45**		**13:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.42	5.96	10.7	6.45	16.4	6.23	13.8	6.61	16.3	6.62	11.9	6.48
Ammonia, Extractable	350.1	mg/kg	3.55	1.22	3.07	1.29	4.1	1.27	2.15	1.33	1.87	1.32	3.48	1.3
Aluminum	6010B	mg/kg	13.6	3.67	65.1	3.88	< 3.81	3.81	10.6	3.98	< 3.97	3.97	102	3.91
Chromium	6010B	mg/kg	41.9	2.59	20.4	2.84	27.7	2.72	17	2.92	13.7	2.97	27	2.89
Lead	6010B	mg/kg	14.2	0.863	11.8	0.946	9.89	0.908	18.7	0.974	12.6	0.989	15.2	0.962
pH	9045C	SU	6.61	--	4.94	--	6.21	--	6.13	--	6.36	--	4.93	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**	
Sample Time			**13:15**		**8:00**		**8:15**		**8:20**		**8:30**		**8:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.15	6.15	14.8 / 15.6*	6.65	13.7	6.18	13.7	6.26	15.6	6.61	9.35	6.51
Ammonia, Extractable	350.1	mg/kg	< 1.25	1.25	1.93	1.36	1.97	1.25	2.29	1.26	2.74	1.35	< 1.31	1.31
Aluminum	6010B	mg/kg	423	3.75	< 4.09	4.09	< 3.76	3.76	< 7.56	7.56	14.8	4.06	< 7.84	7.84
Chromium	6010B	mg/kg	24.8	2.74	15.3	2.97	22.7	2.87	30.2	2.83	24	3.06	21.8	2.82
Lead	6010B	mg/kg	15.6	0.915	10.8	0.989	13.1	0.957	16.2	0.942	14.4	1.02	12.6	0.94
pH	9045C	SU	5.09	--	6.02	--	6.3	--	6.28	--	6.36	--	6.34	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**	
Sample Time			**13:00**		**9:00**		**9:15**		**9:30**		**9:45**		**10:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.6	6.16	18.8	6.45	18.4	6.81	7.21	5.76	15.3	6.78	22.3	6.38
Ammonia, Extractable	350.1	mg/kg	3.2	1.25	2.82	1.29	1.97	1.38	< 1.17	1.17	2.89	1.36	8.83	1.28
Aluminum	6010B	mg/kg	74.1	3.75	12.6	3.88	10.5	4.13	< 7.02	7.02	< 8.18	8.18	9.55	3.84
Chromium	6010B	mg/kg	17.2	2.89	26.1	2.93	26.3	2.76	21.4	2.44	22.6	2.88	21.7	2.73
Lead	6010B	mg/kg	8.27	0.963	14.4	0.976	15.8	0.919	14.1	0.814	12.8	0.96	11.9	0.91
pH	9045C	SU	5.09	--	6.51	--	5.54	--	7.81	--	6.27	--	6.43	--

April 2008
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			O2A		Q3A		R4A		S1A		T2A		U3A	
Sample Date			**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**	
Sample Time			**10:15**		**10:30**		**10:45**		**11:00**		**11:15**		**11:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	17.7	6.27	17.2	6.44	10.9	6.07	19.2	6.34	7.92	6.04	14.9 / 13.7 *	6.2
Ammonia, Extractable	350.1	mg/kg	42.3	1.24	< 1.31	1.31	2.94	1.22	4.16	1.28	< 1.21	1.21	4.75	1.24
Aluminum	6010B	mg/kg	< 3.73	3.73	6.32	3.94	< 3.67	3.67	6.61	3.83	< 3.64	3.64	6.93	3.72
Chromium	6010B	mg/kg	18	2.91	25.8	3.01	28.9	2.85	47.4	2.87	26.7	2.72	25.8	2.71
Lead	6010B	mg/kg	12.2	0.97	11.5	1	13.2	0.949	15.1	0.955	12.7	0.908	11.5	0.904
pH	9045C	SU	6.15	--	6.06	--	7.16	--	5.89	--	6.99	--	6.31	--

Sample ID			U4A		U4B		W2A		Y1A		Y4A		Z3A	
Sample Date			**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**		**04/30/08**	
Sample Time			**11:45**		**11:50**		**12:00**		**12:15**		**12:30**		**12:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	17.3	6.19	19	6.25	20	6.2	9.73	6.09	17.3	6.19	16.8	6.06
Ammonia, Extractable	350.1	mg/kg	2.52	1.26	4.06	1.27	5.04	1.27	3.06	1.24	5.67	1.26	2.64	1.22
Aluminum	6010B	mg/kg	10.6	3.79	9.6	3.82	< 3.8	3.8	6.93	3.71	< 7.54	7.54	11.4	3.65
Chromium	6010B	mg/kg	22.9	2.71	16.1	2.95	18	2.75	33.2	2.78	19.9	2.92	26.9	2.6
Lead	6010B	mg/kg	11.7	0.903	9.33	0.983	8.53	0.915	13.7	0.928	13.9	0.972	16.3	0.866
pH	9045C	SU	6.22	--	6.29	--	6.6	--	6.87	--	5.87	--	5.75	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit
* = two results were reported by the laboratory for this sample, the results are reported to have the same dilution factor and reporting limit

May 2008
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A2A**		**A4A**		**AA1**		**B3A**		**B4A**		**DD1**	
Sample Date			**05/28/08**		**05/28/08**		**05/28/08**		**05/28/08**		**05/28/08**		**05/28/08**	
Sample Time			**6:30**		**6:45**		**13:00**		**7:00**		**7:15**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	13.4	5.61	9.97	5.44	11	5.92	16.9	5.45	16.9	5.83	22.1	6.09
Ammonia, Extractable	350.1	mg/kg	< 1.15	1.15	< 1.14	1.14	< 1.2	1.2	3.73	1.13	3.45	1.17	7.4	1.31
Aluminum	6010B	mg/kg	< 3.45	3.45	< 3.42	3.42	151	3.6	< 3.4	3.4	< 3.5	3.5	121	3.92
Chromium	6010B	mg/kg	25.4	2.64	19.1	2.59	21.2	2.76	15.8	2.58	29	2.7	16.2	3.04
Lead	6010B	mg/kg	11.5	0.879	8.84	0.865	12	0.92	12.9	0.86	13.9	0.9	23.5	1.01
pH	9045C	SU	6.69	--	7.24	--	5.15	--	6.42	--	6.42	--	5.21	--

Sample ID			**EE1**		**F1A**		**F4A**		**F4B**		**G3A**		**H2A**	
Sample Date			**05/28/08**		**05/28/08**		**05/28/08**		**05/28/08**		**05/28/08**		**05/28/08**	
Sample Time			**12:45**		**7:30**		**7:45**		**7:50**		**8:00**		**8:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	5.65	5.64	18	5.89	15.8	5.46	105	6.1	50	5.66	19.3	6.21
Ammonia, Extractable	350.1	mg/kg	< 1.19	1.19	4.82	1.14	< 1.2	1.2	< 1.21	1.21	1.46	1.15	2.39	1.26
Aluminum	6010B	mg/kg	99	3.58	< 3.41	3.41	< 3.59	3.59	< 3.62	3.62	< 3.44	3.44	< 3.77	3.77
Chromium	6010B	mg/kg	22.9	2.74	13	2.62	18	2.75	18.1	2.71	28.4	2.65	19.3	2.83
Lead	6010B	mg/kg	14.1	0.912	11.6	0.873	11.6	0.918	9.13	0.904	12.6	0.883	11.6	0.942
pH	9045C	SU	5.36	--	6.18	--	6.69	--	6.71	--	6.38	--	6.51	--

Sample ID			**HH1**		**I4A**		**J2A**		**L1A**		**L3A**		**N2A**	
Sample Date			**05/28/08**		**05/28/08**		**05/28/08**		**05/28/08**		**05/28/08**		**05/28/08**	
Sample Time			**12:30**		**8:30**		**8:45**		**9:00**		**9:15**		**9:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14	5.75	19.4	5.92	32.4	5.83	19	5.9	16.5	5.61	13.6	5.9
Ammonia, Extractable	350.1	mg/kg	< 1.16	1.16	1.21	1.21	< 1.22	1.22	3.43	1.2	< 1.18	1.18	2.3	1.15
Aluminum	6010B	mg/kg	96.1	3.49	< 3.63	3.63	< 3.65	3.65	< 3.6	3.6	7.96	7.1	< 3.46	3.46
Chromium	6010B	mg/kg	13.8	2.55	24.8	2.82	21.6	2.77	13.3	2.74	17.6	2.71	28	2.61
Lead	6010B	mg/kg	9.91	0.851	16	0.94	12.9	0.924	12	0.913	10.1	0.904	11.9	0.87
pH	9045C	SU	5.37	--	6.32	--	6.58	--	6.06	--	6.84	--	6.26	--

May 2008
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O1A**		**O3A**		**P4A**		**S2A**		**S4A**		**T3A**	
Sample Date			**05/28/08**		**05/28/08**		**05/28/08**		**05/28/08**		**05/28/08**		**05/28/08**	
Sample Time			**10:00**		**10:15**		**10:30**		**10:45**		**11:00**		**11:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	19.3	5.9	22.1	5.45	16.1	6.01	15.4	5.84	16.3	6.14	20.2	6.13
Ammonia, Extractable	350.1	mg/kg	3.24	1.2	3.4	1.11	9.89	1.16	2.4	1.16	2.9	1.17	1.38	1.16
Aluminum	6010B	mg/kg	< 3.61	3.61	< 3.34	3.34	< 3.48	3.48	< 3.47	3.47	< 3.5	3.5	< 3.49	3.49
Chromium	6010B	mg/kg	32	2.54	42.4	2.55	37	2.6	33.9	2.63	19.2	2.7	20.2	2.65
Lead	6010B	mg/kg	11	0.847	15	0.851	14.9	0.867	12.5	0.877	11.6	0.899	9.78	0.882
pH	9045C	SU	5.97	--	6.29	--	6.22	--	6.33	--	6.24	--	6.35	--

Sample ID			**T3B**		**U1A**		**X4A**		**Y3A**		**Z2A**	
Sample Date			**05/28/08**		**05/28/08**		**05/28/08**		**05/28/08**		**05/28/08**	
Sample Time			**11:20**		**11:30**		**11:45**		**12:00**		**12:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	15.5	5.76	25.4	5.14	12.7	6.11	19.6	5.82	24.2	5.12
Ammonia, Extractable	350.1	mg/kg	< 1.17	1.17	7.35	1.16	3.78	1.16	2.41	1.19	4.34	1.18
Aluminum	6010B	mg/kg	< 3.51	3.51	7.18	3.48	8.67	3.47	< 3.58	3.58	< 3.53	3.53
Chromium	6010B	mg/kg	22.5	2.65	29.3	2.68	20.2	2.64	20.2	2.76	24.9	2.7
Lead	6010B	mg/kg	9.48	0.883	17.7	0.893	8.34	0.881	16	0.921	13.8	0.899
pH	9045C	SU	6.23	--	5.83	--	5.16	--	6.28	--	5.86	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

June 2008
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A3A**		**AA1**		**B1A**		**D2A**		**DD1**		**E4A**	
Sample Date			**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**	
Sample Time			**6:30**		**13:00**		**6:45**		**7:00**		**13:15**		**7:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.6	5.66	< 6.04	6.04	21.8	5.7	11.3	5.62	5.88	5.85	13.4	6.05
Ammonia, Extractable	350.1	mg/kg	< 1.19	1.19	< 1.19	1.19	2.02	1.19	< 1.17	1.17	1.57	1.22	< 1.18	1.18
Aluminum	6010B	mg/kg	< 3.58	3.58	106	3.57	< 3.56	3.56	15.5	3.52	196	3.67	5.78	3.53
Chromium	6010B	mg/kg	14.3	2.74	17.7	2.75	12	2.7	16.2	2.62	14.4	2.66	15.2	2.63
Lead	6010B	mg/kg	7.49	0.912	10	0.918	10.9	0.901	13.4	0.872	13.1	0.887	10.4	0.878
pH	9045C	SU	6.69	--	5.12	--	6.09	--	5.83	--	5.09	--	5.76	--

Sample ID			**EE1**		**F3A**		**G2A**		**G2B**		**H1A**		**H4A**	
Sample Date			**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**	
Sample Time			**12:45**		**7:30**		**7:45**		**7:50**		**8:00**		**8:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.53	5.53	16.1	5.76	31.1	5.28	14.4	4.89	21	5.37	23.6	4.87
Ammonia, Extractable	350.1	mg/kg	< 1.16	1.16	< 1.22	1.22	1.77	1.19	< 1.46	1.46	< 1.26	1.26	1.84	1.16
Aluminum	6010B	mg/kg	386	3.47	< 3.65	3.65	< 3.58	3.58	< 4.37	4.37	< 3.78	3.78	< 3.49	3.49
Chromium	6010B	mg/kg	17.2	2.49	10.5	2.69	16.3	2.78	14.5	3.35	21.7	2.92	25.2	2.56
Lead	6010B	mg/kg	11	0.829	9.96	0.897	11.5	0.927	11.8	1.12	13.8	0.973	8.24	0.852
pH	9045C	SU	5.13	--	4.76	--	5.27	--	5.64	--	5.26	--	4.85	--

Sample ID			**HH1**		**J3A**		**L4A**		**M2A**		**MW-4A**		**N1A**	
Sample Date			**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**	
Sample Time			**12:30**		**8:30**		**8:45**		**9:00**		**13:30**		**9:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.91	5.91	17.5	6.32	18.8	6.63	25.2	6.05	< 7.19	7.19	12.9	5.63
Ammonia, Extractable	350.1	mg/kg	< 1.15	1.15	< 1.25	1.25	< 1.21	1.21	< 1.13	1.13	< 1.35	1.35	< 1.12	1.12
Aluminum	6010B	mg/kg	57.2	3.46	< 3.76	3.76	< 3.62	3.62	< 3.4	3.4	< 4.04	4.04	< 3.37	3.37
Chromium	6010B	mg/kg	11	2.58	19.9	2.79	15.5	2.61	24.8	2.61	30.8	3.13	7.41	2.55
Lead	6010B	mg/kg	6.43	0.86	12.8	0.929	7.95	0.87	14.2	0.869	11.1	1.04	4.07	0.849
pH	9045C	SU	5.4	--	5.33	--	5.41	--	5.6	--	5.77	--	5.65	--

June 2008
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**N3A**		**O4A**		**Q2A**		**S3A**		**T1A**		**T4A**	
Sample Date			**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**	
Sample Time			**9:30**		**9:45**		**10:00**		**10:15**		**10:30**		**10:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	26.3	5.79	24	5	44.1	6.22	60.8	6.39	18.5	4.36	9.22	5.51
Ammonia, Extractable	350.1	mg/kg	< 1.22	1.22	3.2	1.21	< 1.16	1.16	< 1.15	1.15	< 1.14	1.14	3.99	1.17
Aluminum	6010B	mg/kg	< 3.67	3.67	< 3.62	3.62	< 3.47	3.47	< 3.46	3.46	< 3.41	3.41	< 3.51	3.51
Chromium	6010B	mg/kg	18.7	2.77	28.3	2.64	22.7	2.45	30.2	2.65	30.7	2.57	21.7	2.61
Lead	6010B	mg/kg	12.2	0.922	45.8	0.879	10.6	0.816	14.7	0.883	14	0.855	10.6	0.869
pH	9045C	SU	5.38	--	5.95	--	5.76	--	6.01	--	5.21	--	6.1	--

Sample ID			**U2A**		**V4A**		**V4B**		**W3A**		**Y2A**		**Z1A**	
Sample Date			**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**		**06/26/08**	
Sample Time			**11:00**		**11:15**		**11:20**		**11:30**		**11:45**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	38	5.51	31.3	6.18	18.4	5.87	37	6.01	10.2	5.11	10.8	5.32
Ammonia, Extractable	350.1	mg/kg	< 1.15	1.15	< 1.18	1.18	< 1.2	1.2	< 1.16	1.16	< 1.1	1.1	< 1.17	1.17
Aluminum	6010B	mg/kg	< 3.44	3.44	< 3.55	3.55	< 3.61	3.61	< 3.49	3.49	< 3.29	3.29	6.12	3.52
Chromium	6010B	mg/kg	31.8	2.57	29.1	2.75	20.7	2.63	32.8	2.58	28.3	2.54	20	2.59
Lead	6010B	mg/kg	7.89	0.857	11	0.916	10.6	0.876	10.3	0.86	12.8	0.847	8.5	0.864
pH	9045C	SU	6.33	--	5.99	--	6	--	6.18	--	7.16	--	5.79	--

Sample ID			**Z4A**	
Sample Date			**06/26/08**	
Sample Time			**12:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.29	5.62
Ammonia, Extractable	350.1	mg/kg	< 1.09	1.09
Aluminum	6010B	mg/kg	< 3.28	3.28
Chromium	6010B	mg/kg	25.2	2.52
Lead	6010B	mg/kg	11.4	0.841
pH	9045C	SU	5.68	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

July 2008
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			A1A		AA1		B2A		C4A		D3A		DD1	
Sample Date			07/28/08		07/28/08		07/28/08		07/28/08		07/28/08		07/28/08	
Sample Time			6:30		13:00		6:45		7:00		7:15		13:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	18.1	6.41	8.67	5.94	19.5	6.04	15.5	5.6	18.5	5.72	18.8	5.86
Ammonia, Extractable	350.1	mg/kg	5.46	1.28	1.3	1.18	2.87	1.21	2.76	1.13	3.73	1.15	5.24	1.19
Aluminum	6010B	mg/kg	< 3.84	3.84	76	3.55	10.1	3.64	8.62	3.38	< 3.44	3.44	173	3.58
Chromium	6010B	mg/kg	29.3	2.93	17.8	2.62	14.6	2.64	12.4	2.6	19.6	2.65	21.3	2.71
Lead	6010B	mg/kg	13.3	0.976	11.6	0.875	10.6	0.88	17.3	0.868	13.8	0.883	19.4	0.903
pH	9045C	SU	6.73	--	5.08	--	6.86	--	6.21	--	6.53	--	5.19	--

Sample ID			EE1		F2A		G1A		G1B		G4A		H3A	
Sample Date			07/28/08		07/28/08		07/28/08		07/28/08		07/28/08		07/28/08	
Sample Time			12:45		7:30		7:45		7:50		8:00		8:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	5.98	5.8	16.1 / 16.6*	6.1	16	5.66	17.9	5.54	16.4	6.12	11.9	5.84
Ammonia, Extractable	350.1	mg/kg	1.18	1.17	2.51	1.23	2.82	1.13	1.78	1.13	2.57	1.25	3.14	1.19
Aluminum	6010B	mg/kg	333	3.52	< 3.68	3.68	< 3.39	3.39	< 3.38	3.38	< 3.75	3.75	< 3.57	3.57
Chromium	6010B	mg/kg	23.6	2.53	18.6	2.83	21.6	2.61	24.6	2.59	20.1	2.89	21.8	2.57
Lead	6010B	mg/kg	17.1	0.842	11.3	0.945	15	0.869	14.5	0.862	12.8	0.963	10.7	0.857
pH	9045C	SU	5.21	--	5.98	--	6.17	--	6.39	--	6.64	--	7.12	--

Sample ID			HH1		K4A		L2A		M1A		M3A		N4A	
Sample Date			07/28/08		07/28/08		07/28/08		07/28/08		07/28/08		07/28/08	
Sample Time			12:30		8:30		8:45		9:00		9:15		9:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16.3	5.77	20.1	5.58	15.1	6.86	11.7	5.81	23.8	6.21	16	5.73
Ammonia, Extractable	350.1	mg/kg	2.93	1.16	5.33	1.13	3	1.37	1.33	1.18	5.52	1.23	2.11	1.15
Aluminum	6010B	mg/kg	104	3.49	< 3.4	3.4	< 4.12	4.12	< 3.53	3.53	< 3.7	3.7	< 3.44	3.44
Chromium	6010B	mg/kg	10	2.63	26.3	2.44	24.3	2.91	19.3	2.73	21.2	2.85	21.8	2.64
Lead	6010B	mg/kg	10.8	0.877	17.6	0.812	16.6	0.971	12.4	0.91	13.5	0.949	12.8	0.881
pH	9045C	SU	5.42	--	6.67	--	5.7	--	6.66	--	6.29	--	6.75	--

July 2008
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			O2A		Q3A		R4A		S1A		T2A		U3A	
Sample Date			07/28/08		07/28/08		07/28/08		07/28/08		07/28/08		07/28/08	
Sample Time			9:45		10:00		10:15		10:30		10:45		11:00	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	25.2	5.5	15.6	6.84	21	5.58	24.8	5.64	17.8	5.59	35.4	7.4
Ammonia, Extractable	350.1	mg/kg	6.2	1.12	2.42	1.37	2.89	1.13	4.39	1.14	2.93	1.12	10.9	1.51
Aluminum	6010B	mg/kg	< 3.36	3.36	< 4.11	4.11	< 3.38	3.38	< 3.41	3.41	< 3.37	3.37	< 4.54	4.54
Chromium	6010B	mg/kg	17.7	2.59	24	3.19	21.2	2.61	22.5	2.63	26	2.52	14	3.5
Lead	6010B	mg/kg	13.1	0.862	10.7	1.06	11.8	0.869	13.4	0.876	14	0.841	8.74	1.17
pH	9045C	SU	5.9	--	5.62	--	7.41	--	6.14	--	7.63	--	6.55	--

Sample ID			U4A		U4B		W2A		Y1A		Y4A		Z3A	
Sample Date			07/28/08		07/28/08		07/28/08		07/28/08		07/28/08		07/28/08	
Sample Time			11:15		11:20		11:30		11:45		12:00		12:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	17.5	5.49	19.3	5.52	26.8	5.52	19.1	5.57	25.1	5.56	17.1	5.44
Ammonia, Extractable	350.1	mg/kg	5.48	1.11	2.55	1.11	6.28	1.11	3.08	1.14	7.36	1.12	2.32	1.11
Aluminum	6010B	mg/kg	4.85	3.33	< 3.32	3.32	< 3.34	3.34	< 3.42	3.42	< 3.36	3.36	< 3.32	3.32
Chromium	6010B	mg/kg	12.7	2.56	17.8	2.43	13.3	2.51	27.8	2.43	33.4	2.5	23.9	2.56
Lead	6010B	mg/kg	10	0.854	10.5	0.811	9.72	0.835	12.5	0.81	14.6	0.832	15.6	0.853
pH	9045C	SU	6.33	--	6.17	--	6.54	--	6.31	--	5.78	--	5.8	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit
* = two results were reported by the laboratory for this sample, the results are reported to have the same dilution factor and reporting limit

August 2008
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A2A**		**A4A**		**B3A**		**B4A**		**EE1**		**F1A**	
Sample Date			**08/27/08**		**08/27/08**		**08/27/08**		**08/27/08**		**08/27/08**		**08/27/08**	
Sample Time			**7:00**		**7:15**		**7:30**		**7:45**		**15:45**		**8:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	6.7	5.35	4.75	5.35	4.61	5.24	3.25	5.72	2.31	5.91	7.37	5.34
Ammonia, Extractable	350.1	mg/kg	22.4	3.24	17.8	3.25	14.9	3.21	22.7	3.43	< 5.91	3.56	25.5	3.28
Aluminum	6010B	mg/kg	< 3.24	1.08	< 3.25	1.08	< 3.21	1.07	< 3.43	1.14	292	1.19	< 3.28	1.09
Chromium	6010B	mg/kg	17.8	2.45	13	2.44	14.4	2.42	42.7	2.61	20.7	2.55	34.4	2.24
Lead	6010B	mg/kg	12.5	0.818	8.08	0.815	12.9	0.808	22.2	0.87	15.8	0.85	18.7	0.748
pH	9045C	SU	6.16	--	6.54	--	6.17	--	6.05	--	5.18	--	5.56	--

Sample ID			**F4A**		**G3A**		**G3B**		**H2A**		**HH1**		**I4A**	
Sample Date			**08/27/08**		**08/27/08**		**08/27/08**		**08/27/08**		**08/27/08**		**08/27/08**	
Sample Time			**8:15**		**8:30**		**8:35**		**8:45**		**15:30**		**9:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16.8	3.28	50.1	3.2	43.7	3.21	17.9	3.38	14.2	3.38	14.9	3.2
Ammonia, Extractable	350.1	mg/kg	2.24	5.42	10.1	5.34	18	5.25	2.58	5.49	1.97	5.65	3.24	5.35
Aluminum	6010B	mg/kg	< 3.28	1.09	4.54	1.07	< 3.21	1.07	< 3.38	1.13	< 3.38	1.13	< 3.2	1.07
Chromium	6010B	mg/kg	16.9	2.49	15	2.35	21.4	2.46	23.3	2.43	18.9	2.53	19.9	2.43
Lead	6010B	mg/kg	13.7	0.829	12.8	0.784	14	0.819	14.8	0.81	13.5	0.844	13.2	0.811
pH	9045C	SU	6.71	--	6.24	--	6.11	--	6.38	--	5.09	--	6.31	--

Sample ID			**J2A**		**L1A**		**L3A**		**M4A**		**N2A**		**O1A**	
Sample Date			**08/27/08**		**08/27/08**		**08/27/08**		**08/27/08**		**08/27/08**		**08/27/08**	
Sample Time			**10:15**		**10:30**		**10:45**		**11:00**		**12:45**		**13:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.7	3.34	36.8	3.21	12.7	3.47	11.7	3.84	22.3	3.33	16.3	3.44
Ammonia, Extractable	350.1	mg/kg	1.84	5.55	18.3	5.33	< 1.16	5.75	< 1.28	6.3	3.3	5.5	4.48	5.6
Aluminum	6010B	mg/kg	< 3.34	1.11	< 3.21	1.07	< 3.47	1.16	< 3.84	1.28	< 3.33	1.11	< 3.44	1.15
Chromium	6010B	mg/kg	20.5	2.54	27.4	2.36	14.7	2.61	26.6	2.71	26.9	2.49	36.1	2.66
Lead	6010B	mg/kg	14.5	0.846	17.2	0.787	12.3	0.869	16.3	0.904	15.1	0.83	17.6	0.885
pH	9045C	SU	6.65	--	6.04	--	6.78	--	5.89	--	6.29	--	5.9	--

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O3A**		**P4A**		**S2A**		**S4A**		**T3A**		**U1A**	
Sample Date			**08/27/08**		**08/27/08**		**08/27/08**		**08/27/08**		**08/27/08**		**08/27/08**	
Sample Time			**13:15**		**13:30**		**13:45**		**14:00**		**14:15**		**14:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	6010B	mg/kg	14.5	3.33	13.7	3.28	19.9	3.26	20.9	3.24	23.6	3.42	28.9	3.38
Ammonia, Extractable	350.1	mg/kg	1.37	5.42	< 1.09	5.32	1.79	5.33	4.7	5.3	3.6	5.6	7.3	5.6
Aluminum	350.1	mg/kg	< 3.33	1.11	< 3.28	1.09	< 3.26	1.09	< 3.24	1.08	< 3.42	1.14	< 3.38	1.13
Chromium	6010B	mg/kg	27.1	2.5	19	2.4	27.6	2.48	18.4	2.46	22.3	2.63	30.9	2.54
Lead	6010B	mg/kg	13.5	0.832	12	0.799	15.2	0.827	14.1	0.819	11.5	0.878	15	0.847
pH	9045C	SU	5.82	--	6.25	--	6.08	--	6.12	--	6.14	--	6.09	--

Sample ID			**X4A**		**Y3A**		**Y3B**		**Z2A**	
Sample Date			**08/27/08**		**08/27/08**		**08/27/08**		**08/27/08**	
Sample Time			**14:45**		**15:00**		**15:05**		**15:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	4.82	5.49	4.35	5.44	2.92	5.46	3.71	5.4
Ammonia, Extractable	350.1	mg/kg	15.9	3.3	20.2	3.29	20.7	3.28	29	3.25
Aluminum	6010B	mg/kg	126	1.1	< 3.29	1.1	< 3.28	1.09	< 3.25	1.08
Chromium	6010B	mg/kg	12.8	2.33	14.6	2.37	20.5	2.48	21.4	2.41
Lead	6010B	mg/kg	8.81	0.776	18.1	0.79	20	0.826	16.1	0.802
pH	9045C	SU	5.55	--	6.32	--	6.26	--	5.72	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A3A**		**AA1**		**B1A**		**D2A**		**DD1**		**E4A**	
Sample Date			**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**	
Sample Time			**7:00**		**13:30**		**7:15**		**7:30**		**13:45**		**7:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	6.87	5.6	9.11	5.5	7.49	6.28	17.5	5.54	13.6	6.46	12.5	6.05
Ammonia, Extractable	350.1	mg/kg	3.94	1.24	2.07	1.3	4.64	1.3	7.12	1.28	1.43	1.26	3.26	1.28
Aluminum	6010B	mg/kg	< 3.71	3.71	64	3.89	< 3.89	3.89	< 3.83	3.83	126	3.78	< 3.84	3.84
Chromium	6010B	mg/kg	20.1	2.53	21.7	2.88	33.8	3	23.4	2.64	19.8	2.73	13.9	2.89
Lead	6010B	mg/kg	10.1	0.843	13.9	0.961	14.1	1	15	0.88	16.4	0.911	8.85	0.965
pH	9045C	SU	7.9	--	5.17	--	6.94	--	5.99	--	4.88	--	6.04	--

Sample ID			**EE1**		**F3A**		**G2A**		**G2B**		**H1A**		**H4A**	
Sample Date			**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**	
Sample Time			**13:15**		**8:00**		**8:15**		**8:20**		**8:30**		**8:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.54	6.54	14.8	6.12	10.2	5.56	12	5.54	10.1	6.39	11.9	6.18
Ammonia, Extractable	350.1	mg/kg	< 1.24	1.24	6.14	1.24	4.71	1.29	6.24	1.25	1.78	1.26	2.32	1.28
Aluminum	6010B	mg/kg	342	3.72	13.4	3.73	< 3.88	3.88	< 3.76	3.76	< 3.78	3.78	< 3.84	3.84
Chromium	6010B	mg/kg	25.4	2.76	15.7	2.73	17.6	2.75	27	2.9	22.7	2.88	24.2	2.95
Lead	6010B	mg/kg	16.9	0.919	13.3	0.911	26	0.918	12.2	0.965	13.1	0.96	8.68	0.985
pH	9045C	SU	5.03	--	5.63	--	5.99	--	6.12	--	5.8	--	5.97	--

Sample ID			**HH1**		**J3A**		**L4A**		**M2A**		**N1A**		**N3A**	
Sample Date			**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**	
Sample Time			**13:00**		**9:00**		**9:15**		**9:30**		**9:45**		**10:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.71	5.34	7.02	5.87	10	5.38	18	6.13	< 6.33	6.33	9.84	6.06
Ammonia, Extractable	350.1	mg/kg	2.42	1.24	1.89	1.25	2.57	1.25	5.17	1.24	< 1.28	1.28	3.02	1.29
Aluminum	6010B	mg/kg	53.6	3.71	< 3.74	3.74	< 3.74	3.74	< 3.71	3.71	< 3.83	3.83	< 3.87	3.87
Chromium	6010B	mg/kg	11	2.75	56.2	2.67	16.8	2.64	32.9	2.59	29.6	2.86	18.9	2.61
Lead	6010B	mg/kg	6.71	0.916	14.7	0.889	9.35	0.88	18.5	0.863	15.3	0.955	10.9	0.868
pH	9045C	SU	5.22	--	6.96	--	6.39	--	6.51	--	6.27	--	7.7	--

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Soil Indicator Parameters Data Summary Table
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Orange County, Virginia

Sample ID			**O4A**		**Q2A**		**S3A**		**T1A**		**T4A**		**U2A**	
Sample Date			**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**	
Sample Time			**10:15**		**10:30**		**10:45**		**11:00**		**11:15**		**11:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit		Reporting Limit
Ammonia	350.1	mg/kg	10.4	6.16	6.52	6.15	9.67	6.41	10.2	6.58	14.5	6.42	6.82	5.76
Ammonia, Extractable	350.1	mg/kg	2.26	1.26	2.06	1.24	3.52	1.25	< 1.24	1.24	4.25	1.3	2.46	1.24
Aluminum	6010B	mg/kg	< 3.77	3.77	< 3.72	3.72	< 3.74	3.74	< 3.73	3.73	< 3.89	3.89	< 3.71	3.71
Chromium	6010B	mg/kg	22.9	2.73	25.1	2.53	21.1	2.51	20	2.81	21.5	2.65	17	2.54
Lead	6010B	mg/kg	13.8	0.911	9.81	0.842	12.2	0.836	11.8	0.936	14.2	0.882	9.79	0.845
pH	9045C	SU	6.44	--	6.58	--	7.78	--	5.94	--	6.98	--	6.38	--

Sample ID			**V4A**		**V4B**		**W3A**		**Y2A**		**Z1A**		**Z4A**	
Sample Date			**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**		**09/30/08**	
Sample Time			**11:45**		**11:50**		**12:00**		**12:15**		**12:30**		**12:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	20.4	7.04	15.3	5.6	14.7	6.23	26.9	5.9	12.3	6.73	13.5	5.75
Ammonia, Extractable	350.1	mg/kg	4.46	1.3	5.29	1.3	3.42	1.34	5.75	1.34	2.89	1.24	3.4	1.21
Aluminum	6010B	mg/kg	< 3.9	3.9	< 3.89	3.89	< 4.01	4.01	< 4.01	4.01	13.2	3.73	< 3.62	3.62
Chromium	6010B	mg/kg	29.2	2.87	18.1	2.91	32.3	2.98	59.3	3.01	26.7	2.8	32.2	2.72
Lead	6010B	mg/kg	15	0.957	12.5	0.969	14.7	0.993	20.1	1	12.3	0.933	15.2	0.906
pH	9045C	SU	6.05	--	5.92	--	6.68	--	6.31	--	5.34	--	5.87	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**	
Sample Time			**7:00**		**13:30**		**7:15**		**7:30**		**7:45**		**13:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.96	6	8.13	6.29	22.5	6.09	8.84	6.35	8.95	6.41	< 6.26	6.26
Ammonia, Extractable	350.1	mg/kg	< 1.21	1.21	< 1.26	1.26	1.9	1.22	3.44	1.28	< 1.31	1.31	2.63	1.26
Aluminum	6010B	mg/kg	< 3.62	3.62	60.7	3.79	< 3.67	3.67	< 3.84	3.84	< 3.94	3.94	114	3.78
Chromium	6010B	mg/kg	19.2	2.44	21	2.64	25.1	2.7	8.3	2.92	18.4	2.81	20.6	2.83
Lead	6010B	mg/kg	10.6	0.812	22	0.88	9.11	0.899	13.7	0.972	12.4	0.936	14.6	0.943
pH	9045C	SU	7	--	5.18	--	5.7	--	5.99	--	5.83	--	4.9	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**	
Sample Time			**13:15**		**8:00**		**8:15**		**8:20**		**8:30**		**8:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.96	5.96	8.57	6.53	6.59	5.78	6.39	5.86	7.68	6.3	< 6.01	6.01
Ammonia, Extractable	350.1	mg/kg	< 1.19	1.19	< 1.31	1.31	< 1.19	1.19	< 1.2	1.2	2.89	1.27	2.31	1.24
Aluminum	6010B	mg/kg	360	3.58	< 3.92	3.92	< 3.58	3.58	< 3.6	3.6	< 3.82	3.82	< 3.72	3.72
Chromium	6010B	mg/kg	17.4	2.75	19.9	3	21.2	2.69	14.9	2.7	21.6	2.79	19.8	2.5
Lead	6010B	mg/kg	15.8	0.917	10.6	1	13.2	0.897	12	0.901	10.6	0.931	11	0.833
pH	9045C	SU	5.01	--	6.07	--	6.17	--	6.3	--	6.07	--	6.5	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**	
Sample Time			**13:00**		**9:00**		**9:15**		**9:30**		**9:45**		**10:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.41	5.96	8	6.18	< 6.64	6.64	< 5.83	5.83	14.6	6.11	55.3	6.18
Ammonia, Extractable	350.1	mg/kg	1.54	1.22	4.86	1.24	1.39	1.37	< 1.19	1.19	19.4	1.24	14.6	1.27
Aluminum	6010B	mg/kg	37.5	3.66	< 3.72	3.72	< 8.21	8.21	< 3.56	3.56	< 3.73	3.73	< 3.81	3.81
Chromium	6010B	mg/kg	9.29	2.48	18.9	2.61	14.8	3.01	27.9	2.7	15.1	2.7	12.6	2.83
Lead	6010B	mg/kg	7.36	0.826	12.1	0.87	17.6	1	13	0.902	10.3	0.899	10.5	0.942
pH	9045C	SU	5.03	--	6.44	--	5.33	--	6.87	--	6	--	6.5	--

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Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**	
Sample Time			**10:15**		**10:30**		**10:45**		**11:00**		**11:15**		**11:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.71	5.83	6.84	6.5	9.09	5.97	11.3	6.18	< 5.83	5.83	9.68	5.85
Ammonia, Extractable	350.1	mg/kg	1.85	1.18	< 1.3	1.3	< 1.21	1.21	< 1.25	1.25	< 1.19	1.19	< 1.2	1.2
Aluminum	6010B	mg/kg	< 3.53	3.53	< 3.9	3.9	< 3.62	3.62	< 3.74	3.74	< 3.57	3.57	< 3.6	3.6
Chromium	6010B	mg/kg	12.9	2.45	27.1	2.8	24.5	2.59	17.2	2.55	24.1	2.68	12.2	2.77
Lead	6010B	mg/kg	11.3	0.818	14.3	0.934	14.9	0.863	14.5	0.849	14.6	0.892	9.95	0.924
pH	9045C	SU	6	--	5.83	--	7	--	5.73	--	7.39	--	6.04	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**		**10/30/08**	
Sample Time			**11:45**		**11:50**		**12:00**		**12:15**		**12:30**		**12:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	10.7	5.98	10.4	6.17	13.2	6.19	8.39	5.99	9.76	6.12	9.25	5.74
Ammonia, Extractable	350.1	mg/kg	< 1.22	1.22	< 1.23	1.23	1.55	1.24	< 1.21	1.21	1.26	1.22	< 1.18	1.18
Aluminum	6010B	mg/kg	< 3.67	3.67	< 3.7	3.7	4.98	3.72	< 3.64	3.64	< 3.67	3.67	< 3.53	3.53
Chromium	6010B	mg/kg	18.5	2.48	21	2.78	16.2	2.63	28.5	2.65	18.4	2.75	20.8	2.38
Lead	6010B	mg/kg	10.8	0.828	11.7	0.928	12.4	0.875	14.1	0.883	16.5	0.918	13.6	0.792
pH	9045C	SU	6.17	--	6.36	--	6.4	--	6.5	--	5.84	--	5.66	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
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< = analyte not detected at or above the specified laboratory reporting limit

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A2A**		**A4A**		**AA1**		**B3A**		**B4A**		**DD1**	
Sample Date			**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**	
Sample Time			**7:30**		**7:45**		**14:00**		**8:00**		**8:15**		**14:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.7	7.4	< 5.36	5.36	6.37	6.31	5.84	5.37	17.3	6.58	47.3	6.7
Ammonia, Extractable	350.1	mg/kg	11.7	1.53	1.35	1.18	1.31	1.27	1.81	1.21	2.05	1.23	81.5	2.69
Aluminum	6010B	mg/kg	< 4.6	4.6	21.9	7.08	123	3.82	22.4	7.29	< 3.68	3.68	66.1	4.03
Chromium	6010B	mg/kg	24.1	3.52	21.2	2.42	28.3	2.73	19.6	2.78	18.3	2.74	13.7	2.93
Lead	6010B	mg/kg	14.2	1.17	10.4	0.807	13.6	0.911	13.3	0.928	14.7	0.912	19.4	0.977
pH	9045C	SU	6.89	--	7.55	--	4.8	--	6.51	--	6.41	--	4.92	--

Sample ID			**EE1**		**F1A**		**F4A**		**F4B**		**G3A**		**H2A**	
Sample Date			**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**	
Sample Time			**13:45**		**8:30**		**8:45**		**8:50**		**9:00**		**9:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.22	6.22	8.3	6.44	11.9	7.04	13.3	6.66	14.4	6.26	10.7	7.16
Ammonia, Extractable	350.1	mg/kg	1.23	1.21	1.61	1.28	< 1.26	1.26	< 1.27	1.27	2.55	1.21	< 1.28	1.28
Aluminum	6010B	mg/kg	415	3.63	< 3.84	3.84	< 3.79	3.79	< 3.8	3.8	5.51	3.64	< 3.84	3.84
Chromium	6010B	mg/kg	28.5	2.63	24.3	2.84	36.3	2.9	23.3	2.78	20.2	2.8	34.5	2.88
Lead	6010B	mg/kg	17.2	0.877	16.5	0.946	30.1	0.965	14.3	0.926	13.7	0.933	17.1	0.961
pH	9045C	SU	4.75	--	5.58	--	5.83	--	6.14	--	5.53	--	5.95	--

Sample ID			**HH1**		**I4A**		**J2A**		**L1A**		**L3A**		**M4A**	
Sample Date			**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**	
Sample Time			**13:30**		**9:30**		**9:45**		**10:00**		**10:15**		**10:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.05	6.22	13.3	5.7	8.76	5.82	29.7	5.75	7.52	6.19	< 5.84	5.84
Ammonia, Extractable	350.1	mg/kg	2.56	1.24	2.56	1.4	5.78	1.32	5.97	1.24	3.7	1.26	1.47	1.34
Aluminum	6010B	mg/kg	85	3.71	< 4.19	4.19	< 3.96	3.96	< 3.73	3.73	< 7.55	7.55	< 8.03	8.03
Chromium	6010B	mg/kg	14.1	2.86	21.4	3.14	14.5	2.77	15	2.61	19.6	2.71	23.3	2.99
Lead	6010B	mg/kg	10.5	0.953	16.7	1.05	14.4	0.924	13.1	0.871	16.5	0.904	14.5	0.996
pH	9045C	SU	4.62	--	5.86	--	6.39	--	5.9	--	6.57	--	5.32	--

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Sample ID			**N2A**		**O1A**		**O3A**		**P4A**		**S2A**		**S4A**	
Sample Date			**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**	
Sample Time			**10:45**		**11:00**		**11:15**		**11:30**		**11:45**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.62	6.62	8.58	6.4	16.8	6.04	6.44	5.86	12.2	6.36	13.1	5.85
Ammonia, Extractable	350.1	mg/kg	1.3	1.28	< 1.2	1.2	2.76	1.25	< 1.21	1.21	2.41	1.22	1.87	1.25
Aluminum	6010B	mg/kg	< 3.85	3.85	< 3.6	3.6	< 3.74	3.74	10.9	3.63	< 3.66	3.66	< 3.75	3.75
Chromium	6010B	mg/kg	46.1	2.64	29.9	2.64	16.5	2.72	35.9	2.57	20	2.78	14.3	2.85
Lead	6010B	mg/kg	19.8	0.88	15.4	0.88	13.6	0.906	17.3	0.855	15.8	0.928	12.4	0.952
pH	9045C	SU	5.66	--	5.62	--	5.61	--	5.73	--	5.93	--	5.06	--

Sample ID			**T3A**		**T3B**		**U1A**		**X4A**		**Y3A**		**Z2A**	
Sample Date			**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**		**11/24/08**	
Sample Time			**12:15**		**12:20**		**12:30**		**12:45**		**13:00**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	15	5.37	8.96	6.29	9.88	5.72	< 5.07	5.07	13.7	7	17.2	6.4
Ammonia, Extractable	350.1	mg/kg	2.25	1.23	1.74	1.23	1.77	1.21	1.35	1.2	2.82	1.27	2.32	1.25
Aluminum	6010B	mg/kg	< 3.69	3.69	4.94	3.69	< 3.64	3.64	221	3.61	< 7.6	7.6	< 3.74	3.74
Chromium	6010B	mg/kg	28.9	2.71	21	2.75	35	2.67	17.4	2.78	24.2	2.89	29.3	2.8
Lead	6010B	mg/kg	11.9	0.905	11.2	0.918	16	0.889	9.13	0.927	18	0.965	16.1	0.933
pH	9045C	SU	5.15	--	5.53	--	4.94	--	4.39	--	5.81	--	5.47	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A3A**		**AA1**		**B1A**		**D2A**		**DD1**		**E4A**	
Sample Date			**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**	
Sample Time			**7:00**		**13:30**		**7:15**		**7:30**		**13:45**		**7:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.41	6.41	7.29	5.55	16.6	6.08	17.1	6.51	17.4	5.98	9.92	6.55
Ammonia, Extractable	350.1	mg/kg	< 1.22	1.22	< 1.28	1.28	3.48	1.24	6.26	1.27	2.96	1.36	2.15	1.21
Aluminum	6010B	mg/kg	4.8	3.65	64.1	3.84	< 3.71	3.71	17.4	3.8	159	4.07	< 3.62	3.62
Chromium	6010B	mg/kg	26.1	2.8	28.4	2.85	23	2.8	19.1	2.81	14.2	3.1	35.6	2.59
Lead	6010B	mg/kg	8.94	0.932	10.3	0.949	11.4	0.932	11.4	0.938	22.1	1.03	11	0.863
pH	9045C	SU	8.08	--	5.17	--	6.49	--	5.83	--	5.04	--	6.15	--

Sample ID			**EE1**		**F3A**		**G2A**		**G2B**		**H1A**		**H4A**	
Sample Date			**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**	
Sample Time			**13:15**		**8:00**		**8:15**		**8:20**		**8:30**		**8:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.89	5.89	10.1	6.46	12.7	5.8	16.5	5.91	14.3	5.75	6.89	6.15
Ammonia, Extractable	350.1	mg/kg	< 1.23	1.23	5.01	1.24	2.6	1.31	3.34	1.26	< 1.25	1.25	1.36	1.18
Aluminum	6010B	mg/kg	323	3.7	5.25	3.73	< 3.94	3.94	< 3.78	3.78	4.55	3.74	9.91	3.54
Chromium	6010B	mg/kg	24.4	2.81	21.3	2.77	39	3.03	23.8	2.92	21.4	2.68	33.8	2.74
Lead	6010B	mg/kg	15.4	0.936	12	0.922	11.7	1.01	12.1	0.975	14.8	0.894	7.13	0.915
pH	9045C	SU	5.04	--	5.96	--	6.2	--	6.37	--	6.12	--	5.78	--

Sample ID			**HH1**		**J3A**		**L4A**		**M2A**		**N1A**		**N3A**	
Sample Date			**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**	
Sample Time			**13:00**		**9:00**		**9:15**		**9:30**		**9:45**		**10:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	6.6	5.01	8.83	5.51	16.5	6.1	16.9	6.02	< 6.13	6.13	10.4	6.64
Ammonia, Extractable	350.1	mg/kg	1.23	1.21	< 1.26	1.26	4.18	1.24	4.99	1.23	< 1.23	1.23	< 1.25	1.25
Aluminum	6010B	mg/kg	80.6	3.63	< 7.55	7.55	< 3.73	3.73	4.43	3.68	< 3.7	3.7	< 3.76	3.76
Chromium	6010B	mg/kg	15.3	2.77	30.2	2.92	15	2.88	30.2	2.8	24.5	2.8	23.9	2.8
Lead	6010B	mg/kg	7.24	0.922	13.7	0.973	9.41	0.961	15.4	0.934	46.2	0.932	12.3	0.935
pH	9045C	SU	5.11	--	7	--	6.6	--	6.69	--	6.48	--	7.35	--

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Aerojet Facility
Orange County, Virginia

Sample ID			**O4A**		**Q2A**		**S3A**		**T1A**		**T4A**		**U2A**	
Sample Date			**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**	
Sample Time			**10:15**		**10:30**		**10:45**		**11:00**		**11:15**		**11:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	17	5.64	7.32	5.17	13.8	6.12	13.1	6.09	12.1	6.01	7.02	5.27
Ammonia, Extractable	350.1	mg/kg	< 1.23	1.23	< 1.22	1.22	6.38	1.24	3.43	1.19	3.43	1.24	1.71	1.2
Aluminum	6010B	mg/kg	< 3.7	3.7	< 3.66	3.66	9.43	3.73	12.3	3.58	5.54	3.72	4.72	3.61
Chromium	6010B	mg/kg	29.8	2.77	25.1	2.62	28.5	2.77	24.1	2.42	25.3	2.79	36.9	2.75
Lead	6010B	mg/kg	14.1	0.925	11.3	0.873	11.7	0.922	12.6	0.805	14.5	0.931	12.3	0.916
pH	9045C	SU	6.23	--	6.97	--	7.63	--	6.46	--	6.7	--	6.01	--

Sample ID			**V4A**		**V4B**		**W3A**		**Y2A**		**Z1A**		**Z4A**	
Sample Date			**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**		**12/09/08**	
Sample Time			**11:45**		**11:50**		**12:00**		**12:15**		**12:30**		**12:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12.7	6.18	13.8	5.67	23.4	6.18	15.1	5.76	12.4	5.97	9.5	5.88
Ammonia, Extractable	350.1	mg/kg	2.45	1.23	2.61	1.27	3.28	1.31	3.22	1.29	3.57	1.18	1.53	1.2
Aluminum	6010B	mg/kg	< 3.69	3.69	< 3.8	3.8	8.44	3.94	< 3.87	3.87	13.9	7.1	< 3.6	3.6
Chromium	6010B	mg/kg	30.7	2.8	32.7	2.83	19.9	2.88	26.5	2.89	29.2	2.74	22.2	2.72
Lead	6010B	mg/kg	20.9	0.933	15.6	0.942	13	0.96	14.2	0.963	9.69	0.915	18.9	0.907
pH	9045C	SU	6.26	--	6.16	--	6.77	--	6.57	--	5.7	--	5.7	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

January 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			A1A		AA1		B2A		C4A		D3A		DD1	
Sample Date			**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**	
Sample Time			**7:00**		**13:30**		**7:15**		**7:30**		**7:45**		**13:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	19.4	6.19	16.1	6.92	16	6.34	15	6.4	15.5	6.45	15.6	6.89
Ammonia, Extractable	350.1	mg/kg	6.4	1.25	2.29	1.38	4.25	1.31	5.85	1.29	5.48	1.29	2.99	1.39
Aluminum	6010B	mg/kg	< 3.75	3.75	64.3	4.15	< 3.92	3.92	< 3.87	3.87	< 3.87	3.87	89.1	4.16
Chromium	6010B	mg/kg	25.9	2.88	25.8	3.01	24.8	2.88	41	2.88	17.7	2.87	22.6	3.18
Lead	6010B	mg/kg	12.3	0.961	17.2	1	10.9	0.96	18.8	0.959	14.9	0.958	12.8	1.06
pH	9045C	SU	6.01	--	4.69	--	5.67	--	5.62	--	5.81	--	4.5	--

Sample ID			EE1		F2A		G1A		G1B		G4A		H3A	
Sample Date			**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**	
Sample Time			**13:15**		**8:00**		**8:15**		**8:20**		**8:30**		**8:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.75	6.19	18.8	6.76	20.1	6.29	22.1	6.21	23.3	6.12	11.1	6.58
Ammonia, Extractable	350.1	mg/kg	< 1.24	1.24	4.42	1.37	3.63	1.27	4.68	1.27	7.35	1.24	4.6	1.32
Aluminum	6010B	mg/kg	297	3.72	< 4.12	4.12	< 3.8	3.8	< 3.8	3.8	< 3.73	3.73	< 3.97	3.97
Chromium	6010B	mg/kg	23.1	2.67	22.1	3.16	21.6	2.72	18.9	2.89	21.8	2.69	26.2	3.04
Lead	6010B	mg/kg	15.6	0.891	12.8	1.05	15.8	0.905	13.1	0.964	12.2	0.896	12.3	1.01
pH	9045C	SU	4.68	--	5.69	--	5.77	--	5.81	--	5.89	--	6.25	--

Sample ID			HH1		K4A		L2A		M1A		M3A		N4A	
Sample Date			**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**	
Sample Time			**13:00**		**9:00**		**9:15**		**9:30**		**9:45**		**10:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	15.1	6.33	21	6.43	13.6	6.73	6.82	5.88	23.2	6.55	9.63	6.26
Ammonia, Extractable	350.1	mg/kg	1.93	1.27	9.19	1.3	3.81	1.35	1.58	1.2	5.98	1.32	2.3	1.26
Aluminum	6010B	mg/kg	41.7	3.8	< 3.91	3.91	< 4.06	4.06	< 3.59	3.59	< 3.95	3.95	< 3.78	3.78
Chromium	6010B	mg/kg	45.2	2.85	20.6	2.94	17.8	3.13	20.2	2.71	23.3	2.85	25.5	2.71
Lead	6010B	mg/kg	7.95	0.949	11.4	0.979	16.5	1.04	12.5	0.903	14.6	0.951	12.7	0.904
pH	9045C	SU	4.77	--	6.02	--	5.27	--	7.09	--	5.68	--	6.16	--

January 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**	
Sample Time			**10:15**		**10:30**		**10:45**		**11:00**		**11:15**		**11:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	15	6.2	18.5	6.64	26.5	6.22	21.6	6.31	18.1	6.08	18.5	6.25
Ammonia, Extractable	350.1	mg/kg	4.28	1.24	3.76	1.33	4.41	1.24	6.18	1.27	1.78	1.23	3.22	1.27
Aluminum	6010B	mg/kg	< 3.73	3.73	< 3.99	3.99	< 3.73	3.73	4.43	3.82	< 3.7	3.7	< 3.81	3.81
Chromium	6010B	mg/kg	22.7	2.6	26.6	3.03	20.7	2.6	24.8	2.76	26.2	5.33	29.3	2.86
Lead	6010B	mg/kg	14.5	0.866	15.5	1.01	10.5	0.867	15.2	0.921	15.7	1.78	12.1	0.953
pH	9045C	SU	5.79	--	5.6	--	7.19	--	5.32	--	6.3	--	5.81	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**		**01/31/09**	
Sample Time			**11:45**		**11:50**		**12:00**		**12:15**		**12:30**		**12:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	19.1	6.21	19.3	6.13	32.5	6.43	16.7	6.27	19.5	6.36	23.2	6.21
Ammonia, Extractable	350.1	mg/kg	3.14	1.25	2.8	1.23	5.16	1.29	2.31	1.26	2.38	1.27	2.75	1.24
Aluminum	6010B	mg/kg	< 3.76	3.76	< 3.7	3.7	< 3.88	3.88	< 3.77	3.77	< 3.82	3.82	< 3.73	3.73
Chromium	6010B	mg/kg	22.4	2.82	17.9	2.66	17.4	2.93	34.8	2.84	36.4	2.79	30.2	2.81
Lead	6010B	mg/kg	10.7	0.939	11.3	0.887	11.6	0.977	14.2	0.946	17.7	0.93	15.3	0.938
pH	9045C	SU	5.94	--	6.31	--	6.19	--	6.27	--	5.33	--	5.5	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

February 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			A2A		A4A		AA1		B3A		B4A		DD1	
Sample Date			02/26/09		02/26/09		02/26/09		02/26/09		02/26/09		02/26/09	
Sample Time			7:30		7:45		14:00		8:00		8:15		14:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	13.5	6.23	10.3	6.15	< 5.97	5.97	10.7	6.73	14.3	6.48	10.8	6.6
Ammonia, Extractable	350.1	mg/kg	3.08	1.22	3.62	1.18	< 1.22	1.22	2.08	1.25	3.4	1.24	< 1.34	1.34
Aluminum	6010B	mg/kg	12.9	7.3	10.6	3.53	99.4	3.65	< 3.76	3.76	< 3.73	3.73	143	4.03
Chromium	6010B	mg/kg	22	2.55	21.6	2.62	20.7	2.83	15.4	2.83	18.6	2.59	16.7	2.91
Lead	6010B	mg/kg	10.8	0.85	11.9	0.872	12.6	0.945	12.4	0.945	14.5	0.864	16.2	0.969
pH	9045C	SU	7.01	--	7.72	--	5.14	--	6.42	--	6.64	--	5.8	--

Sample ID			EE1		F1A		F4A		F4B		G3A		H2A	
Sample Date			02/26/09		02/26/09		02/26/09		02/26/09		02/26/09		02/26/09	
Sample Time			13:45		8:30		8:45		8:50		9:00		9:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.47	5.47	10.5	5.62	21.2	6.33	12.6	6.02	10.5	5.94	14.6	5.93
Ammonia, Extractable	350.1	mg/kg	< 1.21	1.21	1.37	1.2	13.5	1.23	17.8	1.25	2.29	1.21	< 1.26	1.26
Aluminum	6010B	mg/kg	498	3.62	< 3.6	3.6	< 3.68	3.68	< 3.75	3.75	< 3.63	3.63	< 3.78	3.78
Chromium	6010B	mg/kg	23.1	2.75	21.6	2.73	19.2	2.77	27.6	2.66	20.7	2.77	12.5	2.9
Lead	6010B	mg/kg	13.6	0.918	13.3	0.908	11.4	0.924	12.6	0.887	14	0.923	11.4	0.968
pH	9045C	SU	5.19	--	6.17	--	7.07	--	7.01	--	6.29	--	6.61	--

Sample ID			HH1		I4A		J2A		L1A		L3A		M4A	
Sample Date			02/26/09		02/26/09		02/26/09		02/26/09		02/26/09		02/26/09	
Sample Time			13:30		9:30		9:45		10:00		10:15		10:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.64	5.64	16.7	6.48	8.7	6.51	10.6	5.89	< 6.14	6.14	9.41	6.49
Ammonia, Extractable	350.1	mg/kg	< 1.25	1.25	3.04	1.28	< 1.26	1.26	4.14	1.21	< 1.25	1.25	4.35	1.42
Aluminum	6010B	mg/kg	88.8	3.74	< 3.85	3.85	< 3.79	3.79	< 3.63	3.63	< 3.75	3.75	< 4.26	4.26
Chromium	6010B	mg/kg	12.5	2.62	26.7	2.98	19.8	2.8	24.2	2.72	17.6	2.76	20.9	3.28
Lead	6010B	mg/kg	9.23	0.874	15.6	0.993	14.4	0.934	14.2	0.907	10	0.918	13.5	1.09
pH	9045C	SU	5.11	--	6.54	--	6.69	--	6.44	--	6.69	--	5.87	--

February 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**N2A**		**O1A**		**O3A**		**P4A**		**S2A**		**S4A**	
Sample Date			**02/26/09**		**02/26/09**		**02/26/09**		**02/26/09**		**02/26/09**		**02/26/09**	
Sample Time			**10:45**		**11:00**		**11:15**		**11:30**		**11:45**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.1	6.1	10.8	6.47	13.3	6.31	11.4	5.68	14	5.54	14.3	6.3
Ammonia, Extractable	350.1	mg/kg	< 1.26	1.26	1.65	1.24	4.54	1.2	1.61	1.2	< 1.21	1.21	1.63	1.25
Aluminum	6010B	mg/kg	< 3.77	3.77	< 3.72	3.72	< 3.59	3.59	< 3.6	3.6	6.09	3.62	< 3.76	3.76
Chromium	6010B	mg/kg	36.7	2.83	33.7	2.79	20.9	2.66	33.6	2.67	20.2	2.77	18	2.81
Lead	6010B	mg/kg	14.4	0.942	15	0.93	10.1	0.885	13.3	0.891	12.5	0.922	12.2	0.936
pH	9045C	SU	5.91	--	5.93	--	5.92	--	6.26	--	7	--	6.14	--

Sample ID			**T3A**		**T3B**		**U1A**		**X4A**		**Y3A**		**Z2A**	
Sample Date			**02/26/09**		**02/26/09**		**02/26/09**		**02/26/09**		**02/26/09**		**02/26/09**	
Sample Time			**12:15**		**12:20**		**12:30**		**12:45**		**13:00**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.9	6.21	10.2	6.37	10.6	6.08	6.65	5.85	24.9	6.53	11.1	5.86
Ammonia, Extractable	350.1	mg/kg	1.58	1.24	1.22	1.2	1.7	1.21	< 1.2	1.2	3.77	1.3	2.71	1.22
Aluminum	6010B	mg/kg	< 3.73	3.73	< 3.61	3.61	6.53	3.63	202	3.59	< 3.89	3.89	< 3.67	3.67
Chromium	6010B	mg/kg	24.2	2.79	27.5	2.56	29.4	5.46	11.9	2.57	24.5	2.99	22.2	2.67
Lead	6010B	mg/kg	10.2	0.93	10.4	0.855	18.5	1.82	7.84	0.858	16	0.996	13.6	0.889
pH	9045C	SU	6.09	--	6.35	--	5.67	--	5.11	--	6.58	--	5.96	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

March 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A3A**		**AA1**		**B1A**		**D2A**		**DD1**		**E4A**	
Sample Date			**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**	
Sample Time			**7:00**		**13:30**		**7:15**		**7:30**		**13:45**		**7:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.6	6	11.4	6.53	22.9	5.53	20.4	5.48	12.2	5.45	18.4	6.83
Ammonia, Extractable	350.1	mg/kg	2.58	1.22	7.44	1.31	5.8	1.25	7.44	1.24	3.92	1.31	3.71	1.26
Aluminum	6010B	mg/kg	< 3.67	3.67	129	3.94	< 3.75	3.75	< 3.72	3.72	141	3.92	6.3	3.77
Chromium	6010B	mg/kg	16.3	2.74	30.1	2.93	17.2	2.57	16.9	2.82	41.6	2.87	14.3	2.56
Lead	6010B	mg/kg	12.7	0.912	15.5	0.978	10.9	0.856	12.9	0.939	19.9	0.956	8.23	0.853
pH	9045C	SU	8.01	--	5.01	--	7.05	--	6.56	--	5.19	--	6.25	--

Sample ID			**EE1**		**F3A**		**G2A**		**G2B**		**H1A**		**H4A**	
Sample Date			**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**	
Sample Time			**13:15**		**8:00**		**8:15**		**8:20**		**8:30**		**8:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.27	6.27	19	6.59	18.2	6.06	17.1	6.07	18.4	6.53	12.4	4.68
Ammonia, Extractable	350.1	mg/kg	2.97	1.21	5.53	1.26	3.64	1.26	3.23	1.22	1.35	1.23	4.14	1.26
Aluminum	6010B	mg/kg	377	3.63	< 3.78	3.78	< 7.55	7.55	< 3.67	3.67	< 3.69	3.69	< 3.78	3.78
Chromium	6010B	mg/kg	21.4	2.7	18.4	2.72	21.5	2.61	17.7	2.59	22.8	2.85	25.8	2.76
Lead	6010B	mg/kg	19.2	0.899	13	0.907	15.5	0.871	10.2	0.863	14.2	0.949	11.2	0.921
pH	9045C	SU	5.21	--	5.91	--	6.27	--	5.98	--	5.85	--	5.66	--

Sample ID			**HH1**		**J3A**		**L4A**		**M2A**		**N1A**		**N3A**	
Sample Date			**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**	
Sample Time			**13:00**		**9:00**		**9:15**		**9:30**		**9:45**		**10:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	13.3	5.16	12.4	5.49	11.5	5.38	10.6	6.53	13.9	5.87	18.1	5.25
Ammonia, Extractable	350.1	mg/kg	6.14	1.23	< 1.28	1.28	3.54	1.22	< 1.24	1.24	8.26	1.27	10.6	1.21
Aluminum	6010B	mg/kg	84.4	3.69	< 3.84	3.84	< 3.65	3.65	< 3.72	3.72	< 3.8	3.8	< 3.64	3.64
Chromium	6010B	mg/kg	14.7	2.56	20.4	2.85	21.4	2.77	34	2.53	29.2	2.58	20.9	2.67
Lead	6010B	mg/kg	11.2	0.853	13.3	0.951	12.8	0.922	13.6	0.844	17.5	0.859	13.2	0.892
pH	9045C	SU	5.27	--	6.26	--	6.04	--	6.32	--	6.43	--	6.23	--

March 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O4A**		**Q2A**		**S3A**		**T1A**		**T4A**		**U2A**	
Sample Date			**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**	
Sample Time			**10:15**		**10:30**		**10:45**		**11:00**		**11:15**		**11:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.2	6.4	12.4	6.19	12.1	5.77	15.5	4.92	12.5	6.17	10.4	6.31
Ammonia, Extractable	350.1	mg/kg	3.94	1.22	3.25	1.23	2.48	1.24	3.3	1.18	4.02	1.25	2.37	1.22
Aluminum	6010B	mg/kg	< 3.67	3.67	< 3.69	3.69	< 3.73	3.73	< 3.53	3.53	< 3.75	3.75	< 3.66	3.66
Chromium	6010B	mg/kg	24.5	2.66	26.1	2.73	31.4	2.83	28.4	2.6	18.9	2.63	31	2.74
Lead	6010B	mg/kg	15.1	0.886	11.9	0.909	16.4	0.942	17.4	0.865	16	0.875	14.5	0.914
pH	9045C	SU	6.39	--	6.1	--	6.27	--	5.53	--	6.48	--	6.65	--

Sample ID			**V4A**		**V4B**		**W3A**		**Y2A**		**Z1A**		**Z4A**	
Sample Date			**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**		**03/25/09**	
Sample Time			**11:45**		**11:50**		**12:00**		**12:15**		**12:30**		**12:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.6	5.1	14.9	5.34	15.2	5.09	20.3	6.64	17	5.34	18.3	6.46
Ammonia, Extractable	350.1	mg/kg	2.73	1.25	6.33	1.25	2.56	1.3	5.7	1.28	5.37	1.23	3.96	1.23
Aluminum	6010B	mg/kg	< 3.76	3.76	< 3.74	3.74	< 3.9	3.9	< 3.84	3.84	< 3.7	3.7	< 3.69	3.69
Chromium	6010B	mg/kg	16.6	2.7	18.6	2.73	19.6	2.77	25.5	2.75	28.3	2.51	26.7	2.53
Lead	6010B	mg/kg	15.1	0.901	14.3	0.91	16.9	0.925	17	0.917	13.6	0.837	16.2	0.844
pH	9045C	SU	5.93	--	5.97	--	6.47	--	6.4	--	5.77	--	6.11	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

April 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**	
Sample Time			**7:30**		**14:00**		**7:45**		**8:00**		**8:15**		**14:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16.5	5.78	10.1	6.01	14.1	6.08	13.4	5.94	17.1	5.94	24.7	6.27
Ammonia, Extractable	350.1	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	6010B	mg/kg	< 3.51	3.51	130	3.66	< 3.67	3.67	< 3.61	3.61	< 3.6	3.6	107	3.75
Chromium	6010B	mg/kg	22.1	2.55	22	2.82	21	2.47	11.2	2.54	16.9	2.43	20.9	2.73
Lead	6010B	mg/kg	13.6	0.85	10.8	0.938	11.7	0.823	19	0.847	11.3	0.81	18.8	0.91
pH	9045C	SU	6.16	--	4.99	--	6.05	--	5.89	--	6.24	--	5.04	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**	
Sample Time			**13:45**		**8:30**		**8:45**		**8:50**		**9:00**		**9:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	6.97	5.96	10.9	6.42	17.2	5.82	18	5.82	18.7	5.93	8.44	6.01
Ammonia, Extractable	350.1	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	6010B	mg/kg	511	3.56	< 3.88	3.88	< 3.48	3.48	< 3.48	3.48	< 3.55	3.55	< 3.61	3.61
Chromium	6010B	mg/kg	9.84	2.41	25.1	2.7	19.2	2.56	20	2.4	18.7	2.57	20.4	2.66
Lead	6010B	mg/kg	6.31	0.802	13	0.899	13.5	0.855	13.9	0.8	12.3	0.856	14.6	0.886
pH	9045C	SU	4.98	--	6.01	--	6.32	--	6.39	--	6.37	--	6.68	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**	
Sample Time			**13:30**		**9:30**		**9:45**		**10:00**		**10:15**		**10:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	21.4	6.11	14.7	5.91	13.9	7.1	< 5.62	5.62	47.4	6.49	11.6	6.02
Ammonia, Extractable	350.1	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	6010B	mg/kg	123	3.66	< 3.57	3.57	17.6	8.53	< 3.4	3.4	< 3.93	3.93	< 3.63	3.63
Chromium	6010B	mg/kg	24.9	2.66	17.1	2.54	16.1	3.01	18.9	2.59	27.9	2.78	23.4	2.77
Lead	6010B	mg/kg	14.9	0.887	12.5	0.847	16.6	1	13.1	0.862	17.4	0.927	22.4	0.923
pH	9045C	SU	5.21	--	6.38	--	5.63	--	7.08	--	6.97	--	6.11	--

April 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**	
Sample Time			**10:45**		**11:00**		**11:15**		**11:30**		**11:45**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12.9	5.85	16.2	6.25	10.8	5.85	14.5	6.06	17.8	5.75	14.8	6.03
Ammonia, Extractable	350.1	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	6010B	mg/kg	15.2	7.04	< 3.74	3.74	< 3.57	3.57	< 3.68	3.68	< 3.45	3.45	< 3.62	3.62
Chromium	6010B	mg/kg	19.7	2.61	22	2.8	24.7	2.47	20.1	2.66	21.5	2.6	31.1	2.64
Lead	6010B	mg/kg	15	0.868	12.6	0.932	14.8	0.824	15.8	0.887	10.6	0.866	19.8	0.879
pH	9045C	SU	6.19	--	5.99	--	7.54	--	5.85	--	7.44	--	6.29	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**		**04/28/09**	
Sample Time			**12:15**		**12:20**		**12:30**		**12:45**		**13:00**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	15.3	5.66	16.6	5.77	24.4	6.03	17.1	5.82	24.6	5.98	20.3	5.81
Ammonia, Extractable	350.1	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	6010B	mg/kg	< 3.41	3.41	< 3.46	3.46	< 3.64	3.64	< 3.53	3.53	9.15	3.65	< 3.48	3.48
Chromium	6010B	mg/kg	17.4	2.58	19	2.61	35.6	2.52	33.8	2.38	21.1	2.75	20.4	2.65
Lead	6010B	mg/kg	10.2	0.861	12	0.871	16.6	0.841	15.6	0.794	14.8	0.916	14.1	0.884
pH	9045C	SU	6.18	--	6.28	--	6.53	--	6.01	--	5.77	--	5.72	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit
NA = Not Analyzed

May 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A2A**		**A4A**		**AA1**		**B3A**		**B4A**		**DD1**	
Sample Date			**05/28/09**		**05/28/09**		**05/28/09**		**05/28/09**		**05/28/09**		**05/28/09**	
Sample Time			**7:00**		**7:15**		**13:30**		**7:30**		**7:45**		**13:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.26	6.14	< 6.04	6.04	11.7	6.52	< 6.45	6.45	< 14	14	16.9	6.73
Ammonia, Extractable	350.1	mg/kg	1.69	1.22	< 1.22	1.22	2.39	1.29	< 1.26	1.26	3.58	1.36	2.94	1.31
Aluminum	6010B	mg/kg	< 3.67	3.67	< 3.66	3.66	76.8	3.86	< 3.79	3.79	< 4.08	4.08	99.2	3.93
Chromium	6010B	mg/kg	18.5	2.7	23.4	2.6	15.1	2.86	16.6	2.96	14.8	2.91	13.3	2.71
Lead	6010B	mg/kg	10	0.901	11.8	0.866	11.9	0.954	12.7	0.986	12.5	0.971	8.32	0.904
pH	9045C	SU	7.16	--	7.75	--	4.92	--	6.26	--	6.43	--	4.85	--

Sample ID			**EE1**		**F1A**		**F4A**		**F4B**		**G3A**		**H2A**	
Sample Date			**05/28/09**		**05/28/09**		**05/28/09**		**05/28/09**		**05/28/09**		**05/28/09**	
Sample Time			**13:15**		**8:00**		**8:15**		**8:20**		**8:30**		**8:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.16	6.33	6.63	6.3	< 6.64	6.64	37.3	6.46	9.53	6.39	12.5	6.68
Ammonia, Extractable	350.1	mg/kg	< 1.24	1.24	< 1.26	1.26	< 1.29	1.29	< 1.27	1.27	< 1.27	1.27	7.93	1.33
Aluminum	6010B	mg/kg	405	3.73	< 3.77	3.77	< 3.87	3.87	< 3.8	3.8	< 3.8	3.8	< 4	4
Chromium	6010B	mg/kg	14.1	2.88	17.7	2.64	15	2.87	20.4	3.02	18.5	2.86	15.7	2.98
Lead	6010B	mg/kg	11.6	0.959	12.9	0.881	11.3	0.955	10.4	1.01	13.2	0.954	13.3	0.992
pH	9045C	SU	5.03	--	5.93	--	6.74	--	6.88	--	6.12	--	6.29	--

Sample ID			**HH1**		**I4A**		**J2A**		**L1A**		**L3A**		**N2A**	
Sample Date			**05/28/09**		**05/28/09**		**05/28/09**		**05/28/09**		**05/28/09**		**05/28/09**	
Sample Time			**13:00**		**9:00**		**9:15**		**9:30**		**9:45**		**10:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12.2	5.53	11.2	6.86	11.1	6.59	8.69	6.5	18.6	6.47	10.1	6.48
Ammonia, Extractable	350.1	mg/kg	7.78	1.23	< 1.36	1.36	< 1.28	1.28	< 1.28	1.28	< 1.3	1.3	1.6	1.3
Aluminum	6010B	mg/kg	97.7	3.7	< 4.07	4.07	< 3.85	3.85	< 3.85	3.85	< 3.89	3.89	< 3.91	3.91
Chromium	6010B	mg/kg	10.2	2.75	20.1	2.87	15.5	3.05	16.7	2.65	14.8	2.93	29.8	2.82
Lead	6010B	mg/kg	8.47	0.918	14	0.957	14.5	1.02	14.1	0.885	10.7	0.978	12.3	0.94
pH	9045C	SU	4.98	--	6.22	--	6.86	--	5.95	--	6.74	--	6.1	--

May 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			O1A		O3A		P4A		S2A		S4A		T3A	
Sample Date			05/28/09		05/28/09		05/28/09		05/28/09		05/28/09		05/28/09	
Sample Time			10:30		10:15		11:00		11:15		11:30		11:45	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.36	6.36	8.32	5.69	16.1	6.92	14	6.24	18.6	6.21	14.5	5.97
Ammonia, Extractable	350.1	mg/kg	1.73	1.24	3.39	1.25	< 1.27	1.27	< 1.23	1.23	3.43	1.28	1.24	1.24
Aluminum	6010B	mg/kg	< 3.71	3.71	< 3.74	3.74	< 3.82	3.82	< 3.68	3.68	< 3.85	3.85	< 3.71	3.71
Chromium	6010B	mg/kg	42	2.94	18.8	2.72	24.1	2.65	19	2.8	15.5	2.7	18.2	2.75
Lead	6010B	mg/kg	13.2	0.979	10.2	0.905	13.1	0.882	11.7	0.932	10.3	0.901	8.68	0.917
pH	9045C	SU	5.8	--	6.2	--	6.13	--	6.39	--	5.96	--	6.1	--

Sample ID			T3B		U1A		X4A		Y3A		Z2A	
Sample Date			05/28/09		05/28/09		05/28/09		05/28/09		05/28/09	
Sample Time			11:50		12:00		12:15		12:30		12:45	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.32	5.83	12	6.42	7.36	5.85	22.8	6.78	35.2	5.88
Ammonia, Extractable	350.1	mg/kg	1.3	1.24	5.69	1.21	< 1.2	1.2	4.44	1.29	8.4	1.24
Aluminum	6010B	mg/kg	< 3.71	3.71	< 3.64	3.64	159	3.6	< 3.88	3.88	< 3.73	3.73
Chromium	6010B	mg/kg	20.5	2.61	25.9	2.88	11.6	2.64	19.4	2.9	16	2.77
Lead	6010B	mg/kg	6.57	0.871	11.2	0.959	6.8	0.882	14.6	0.968	12.5	0.923
pH	9045C	SU	5.87	--	5.4	--	4.81	--	6.28	--	5.46	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

June 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A3A**		**AA1**		**B1A**		**D2A**		**DD1**		**E4A**	
Sample Date			**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**	
Sample Time			**7:00**		**13:30**		**7:15**		**7:30**		**13:45**		**7:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16.7	6	11.9	6.15	22.2	5.89	15.6	5.78	15.3	6.46	14.6	6.05
Ammonia, Extractable	350.1	mg/kg	< 1.21	1.21	2.29	1.26	3.75	1.23	2.33	1.22	2.55	1.32	6.83	1.21
Aluminum	6010B	mg/kg	< 3.62	3.62	102	3.77	< 3.68	3.68	< 3.65	3.65	162	3.96	< 3.64	3.64
Chromium	6010B	mg/kg	34.7	2.45	16.3	2.89	19.7	2.81	16.4	2.79	18.3	2.95	9.7	2.77
Lead	6010B	mg/kg	9.43	0.817	14	0.962	12.9	0.935	13.2	0.93	18.6	0.982	7.45	0.923
pH	9045D	SU	8.09	--	5.01	--	6.42	--	6.13	--	4.81	--	6.14	--

Sample ID			**EE1**		**F3A**		**G2A**		**G2B**		**H1A**		**H4A**	
Sample Date			**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**	
Sample Time			**13:15**		**8:00**		**8:15**		**8:20**		**8:30**		**8:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.56	5.56	15.7	6.21	16	6.31	19.5	6.23	23.9	6.48	17.9	6.17
Ammonia, Extractable	350.1	mg/kg	< 1.18	1.18	2.77	1.24	1.96	1.29	12	1.26	< 1.29	1.29	2.62	1.22
Aluminum	6010B	mg/kg	298	3.53	< 3.73	3.73	< 3.88	3.88	< 3.77	3.77	< 3.87	3.87	< 3.67	3.67
Chromium	6010B	mg/kg	19	2.66	22.4	2.82	19.4	3	14.3	2.8	18.5	2.84	16.3	2.82
Lead	6010B	mg/kg	17.5	0.887	14.7	0.941	16.5	0.999	13.4	0.934	14	0.946	9.96	0.941
pH	9045D	SU	5.02	--	5.68	--	6.06	--	6.05	--	5.9	--	5.76	--

Sample ID			**HH1**		**J3A**		**L4A**		**M2A**		**N1A**		**N3A**	
Sample Date			**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**	
Sample Time			**13:00**		**9:00**		**9:15**		**9:30**		**9:45**		**10:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.4	5.72	14.5	6.21	13.9	6.16	16.6	5.59	8.71	5.87	12.9	6.27
Ammonia, Extractable	350.1	mg/kg	4.08	1.23	< 1.25	1.25	< 1.23	1.23	< 1.14	1.14	< 1.2	1.2	< 1.3	1.3
Aluminum	6010B	mg/kg	37.7	3.69	< 3.75	3.75	< 3.69	3.69	< 3.43	3.43	< 3.61	3.61	< 3.91	3.91
Chromium	6010B	mg/kg	10.2	2.79	15.2	2.77	13.3	2.76	15.2	2.61	27	2.77	15.8	3.01
Lead	6010B	mg/kg	8.88	0.93	14.2	0.925	13.4	0.921	13.7	0.871	17	0.922	12.1	1
pH	9045D	SU	5.07	--	6.65	--	6.17	--	6.45	--	6.52	--	7.74	--

June 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O4A**		**Q2A**		**S3A**		**T1A**		**T4A**		**U2A**	
Sample Date			**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**	
Sample Time			**10:15**		**10:30**		**10:45**		**11:00**		**11:15**		**11:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16.2	5.86	15.1	6.32	10.5	6.2	10.2	5.9	13.3	6.24	13.3	6.08
Ammonia, Extractable	350.1	mg/kg	3.08	1.2	1.37	1.23	3.3	1.24	< 1.21	1.21	1.75	1.24	2.15	1.2
Aluminum	6010B	mg/kg	< 3.59	3.59	< 3.68	3.68	< 3.71	3.71	< 3.64	3.64	< 3.71	3.71	< 3.61	3.61
Chromium	6010B	mg/kg	17.3	2.65	14.5	2.72	23.4	2.79	21	2.78	11.7	2.68	31.1	2.75
Lead	6010B	mg/kg	13	0.883	8.67	0.905	14.6	0.93	13	0.927	12.4	0.893	17.4	0.918
pH	9045D	SU	6.4	--	6.45	--	7.51	--	5.85	--	6.39	--	5.87	--

Sample ID			**V4A**		**V4B**		**W3A**		**Y2A**		**Z1A**		**Z4A**	
Sample Date			**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**		**06/24/09**	
Sample Time			**11:45**		**11:50**		**12:00**		**12:15**		**12:30**		**12:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit		Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	10.8	6.08	16.2	5.64	21.8	6.24	17.2	6.11	14.4	6.07	11.3	5.67
Ammonia, Extractable	350.1	mg/kg	< 1.21	1.21	< 1.2	1.2	7.5	1.31	2.76	1.22	2.09	1.22	< 1.17	1.17
Aluminum	6010B	mg/kg	< 3.62	3.62	< 3.61	3.61	< 3.92	3.92	< 3.67	3.67	< 3.65	3.65	< 3.5	3.5
Chromium	6010B	mg/kg	14.4	2.66	20.1	2.73	22.1	2.95	20.3	2.8	25.7	2.77	17.6	2.6
Lead	6010B	mg/kg	12.9	0.885	16.4	0.909	19.3	0.984	17.9	0.935	16	0.924	15.3	0.868
pH	9045D	SU	5.57	--	5.65	--	6.5	--	6.22	--	5.37	--	5.66	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

July 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**	
Sample Time			**7:30**		**14:00**		**7:45**		**8:00**		**8:15**		**14:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12.7	6.8	7.41	6.05	9.05	6.61	< 7.21	7.21	8.43	5.53	12.8	6.37
Ammonia, Extractable	350.1	mg/kg	2.11	1.36	< 1.22	1.22	4.11	1.32	< 1.47	1.47	< 1.14	1.14	2.73	1.27
Aluminum	6010B	mg/kg	< 4.09	4.09	47.3	3.67	< 3.97	3.97	< 4.4	4.4	< 3.41	3.41	143	3.81
Chromium	6010B	mg/kg	18.3	3.01	15.7	2.61	18.9	3	11.8	3.12	15.5	2.49	14.7	2.81
Lead	6010B	mg/kg	14.2	1	12	0.871	12.3	0.999	16.5	1.04	16.1	0.829	22.8	0.935
pH	9045D	SU	6.68	--	5.06	--	6.44	--	6.01	--	6.29	--	4.9	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**	
Sample Time			**13:45**		**8:30**		**8:45**		**8:50**		**9:00**		**9:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.89	5.89	8.01	6.57	11.1	5.8	11.6	5.55	12	5.48	8.62	6.16
Ammonia, Extractable	350.1	mg/kg	< 1.2	1.2	< 1.32	1.32	5.6	1.13	1.51	1.14	< 1.12	1.12	< 1.25	1.25
Aluminum	6010B	mg/kg	369	3.59	< 3.97	3.97	< 6.78	6.78	< 3.43	3.43	< 3.35	3.35	< 3.74	3.74
Chromium	6010B	mg/kg	21.3	2.61	17.4	2.71	17.6	2.46	14.2	2.56	16.5	2.46	18.7	2.8
Lead	6010B	mg/kg	22.9	0.868	12.8	0.904	14.9	0.819	13.9	0.855	12.8	0.82	13.9	0.935
pH	9045D	SU	5.12	--	5.66	--	6.29	--	6.26	--	6.04	--	6.75	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**	
Sample Time			**13:30**		**9:30**		**9:45**		**10:00**		**10:15**		**10:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	6.67	5.86	15.9	5.72	< 7.19	7.19	< 5.61	5.61	6.38	6.35	7.89	5.77
Ammonia, Extractable	350.1	mg/kg	1.98	1.18	3.33	1.17	2.08	1.43	< 1.08	1.08	< 1.26	1.26	1.92	1.17
Aluminum	6010B	mg/kg	70.9	3.55	< 3.51	3.51	< 4.3	4.3	< 3.24	3.24	< 7.56	7.56	< 3.52	3.52
Chromium	6010B	mg/kg	11	2.71	14.5	2.6	15.6	3.06	19	2.25	17.2	2.61	18.4	2.6
Lead	6010B	mg/kg	9.37	0.905	11.9	0.866	16.7	1.02	13.9	0.749	14.1	0.87	14	0.867
pH	9045D	SU	5.21	--	6.36	--	5.59	--	7.45	--	5.8	--	6.3	--

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**	
Sample Time			**10:45**		**11:00**		**11:15**		**11:30**		**11:45**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.6	5.66	10.8	6.35	6.23	5.91	18.2	5.77	11.4	5.68	11.3	5.67
Ammonia, Extractable	350.1	mg/kg	1.76	1.13	< 1.25	1.25	< 1.18	1.18	2.97	1.17	< 1.13	1.13	1.6	1.14
Aluminum	6010B	mg/kg	< 3.39	3.39	< 3.76	3.76	< 3.53	3.53	< 3.52	3.52	< 3.4	3.4	< 3.41	3.41
Chromium	6010B	mg/kg	18.4	2.6	21.1	2.67	25.9	2.48	17.5	2.62	24.1	2.54	18.3	2.38
Lead	6010B	mg/kg	15	0.866	14.1	0.89	15	0.826	15.8	0.872	14.4	0.847	12.2	0.793
pH	9045D	SU	6.06	--	5.69	--	7.43	--	5.61	--	7.35	--	6.26	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**		**07/30/09**	
Sample Time			**12:15**		**12:20**		**12:30**		**12:45**		**13:00**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	13.4	5.72	13.5	5.64	14.9	5.66	15.4	5.83	16.7	5.78	18.6	5.59
Ammonia, Extractable	350.1	mg/kg	10.8	1.15	1.65	1.14	1.67	1.14	< 1.19	1.19	1.89	1.15	2.88	1.12
Aluminum	6010B	mg/kg	< 3.46	3.46	< 3.42	3.42	< 3.42	3.42	< 3.57	3.57	< 3.44	3.44	< 3.37	3.37
Chromium	6010B	mg/kg	14.8	2.37	15.6	2.61	12.6	2.63	28	2.7	19.9	2.56	21.4	2.45
Lead	6010B	mg/kg	12.4	0.789	12.8	0.87	11.2	0.875	17.3	0.9	17.4	0.855	17	0.817
pH	9045D	SU	6.5	--	6.28	--	6.33	--	6.4	--	5.67	--	5.69	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

August 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A2A**		**A4A**		**AA1**		**B3A**		**B4A**		**DD1**	
Sample Date			**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**	
Sample Time			**9:30**		**9:45**		**16:00**		**10:00**		**10:15**		**16:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.28	5.38	8.46	5.45	6.45	6	19.4	5.37	15.2	5.64	9.15	6.37
Ammonia, Extractable	350.1	mg/kg	< 1.07	1.07	< 1.08	1.08	< 1.19	1.19	11	1.08	2.64	1.13	2.13	1.29
Aluminum	6010B	mg/kg	< 3.21	3.21	< 3.25	3.25	65.1	3.58	< 3.24	3.24	< 3.38	3.38	141	3.88
Chromium	6010B	mg/kg	18	2.5	20.9	2.47	16.5	2.61	16.9	2.25	21.6	2.57	18.1	2.82
Lead	6010B	mg/kg	12.6	0.832	14	0.824	13.2	0.87	12.3	0.75	17.4	0.858	19.9	0.939
pH	9045D	SU	6.42	--	7.07	--	5.17	--	6.03	--	6.2	--	5.24	--

Sample ID			**EE1**		**F1A**		**F4A**		**G3A**		**G3B**		**H2A**	
Sample Date			**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**	
Sample Time			**15:45**		**10:30**		**10:45**		**11:00**		**11:05**		**11:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.85	5.85	9.74	5.44	9.94	5.62	13	5.4	9.01	5.33	11.2	5.81
Ammonia, Extractable	350.1	mg/kg	< 1.18	1.18	3.94	1.1	< 1.12	1.12	2.07	1.09	< 1.08	1.08	8.36	1.17
Aluminum	6010B	mg/kg	334	3.54	< 3.29	3.29	5.49	3.36	< 3.26	3.26	< 3.25	3.25	< 3.5	3.5
Chromium	6010B	mg/kg	18.5	2.68	23.4	2.52	23.8	2.53	19.4	2.34	18.2	2.53	39.6	2.57
Lead	6010B	mg/kg	16.6	0.893	16.9	0.841	16.4	0.844	17.1	0.78	14.9	0.844	17.8	0.857
pH	9045D	SU	5.12	--	5.56	--	6.57	--	5.83	--	5.77	--	6.16	--

Sample ID			**HH1**		**I4A**		**J2A**		**L1A**		**L3A**		**M4A**	
Sample Date			**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**	
Sample Time			**15:30**		**11:30**		**11:45**		**12:00**		**12:15**		**12:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	6.73	5.61	17.1	5.4	7.03	5.48	21.7	5.38	6.91	5.88	< 6.86	6.86
Ammonia, Extractable	350.1	mg/kg	2.52	1.13	1.28	1.12	< 1.13	1.13	5.66	1.11	< 1.17	1.17	< 1.39	1.39
Aluminum	6010B	mg/kg	82.6	3.39	8.44	3.35	< 3.39	3.39	< 6.66	6.66	< 3.5	3.5	< 4.18	4.18
Chromium	6010B	mg/kg	15.3	2.54	13.7	2.41	19.9	2.38	99.3	2.46	28.3	2.64	12.2	3.14
Lead	6010B	mg/kg	10.7	0.845	16	0.803	14.9	0.794	15.1	0.819	15.9	0.879	11.2	1.05
pH	9045D	SU	5.17	--	6.36	--	7.02	--	5.68	--	6.66	--	5.39	--

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**N2A**		**O1A**		**O3A**		**P4A**		**S2A**		**S4A**	
Sample Date			**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**	
Sample Time			**12:45**		**13:00**		**13:15**		**13:30**		**13:45**		**14:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	10.5	5.81	10.6	5.92	9.54	5.69	11	5.86	14.1	5.83	11.6	5.74
Ammonia, Extractable	350.1	mg/kg	< 1.15	1.15	2.48	1.2	1.16	1.14	< 1.2	1.2	< 1.19	1.19	17.4	1.16
Aluminum	6010B	mg/kg	< 3.45	3.45	< 3.6	3.6	< 6.86	6.86	< 3.59	3.59	< 3.57	3.57	< 3.48	3.48
Chromium	6010B	mg/kg	30.6	2.51	28	2.76	18.1	2.6	32.1	2.74	23.2	2.5	18.1	2.6
Lead	6010B	mg/kg	17.4	0.838	15.8	0.921	15.3	0.865	18.4	0.912	15.8	0.835	15.2	0.867
pH	9045D	SU	6.31	--	6.21	--	6.31	--	6.2	--	5.87	--	5.93	--

Sample ID			**T3A**		**U1A**		**Y3A**		**Y3B**		**Y4A**		**Z2A**	
Sample Date			**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**		**08/28/09**	
Sample Time			**14:15**		**14:30**		**15:00**		**15:05**		**14:45**		**15:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12.8	5.75	14	5.67	14.6	5.69	18.3	5.78	17.9	5.47	12.9	5.56
Ammonia, Extractable	350.1	mg/kg	< 1.15	1.15	4.37	1.15	5.09	1.16	6.96	1.16	9.38	1.11	5.53	1.12
Aluminum	6010B	mg/kg	< 3.44	3.44	< 3.46	3.46	< 3.49	3.49	< 3.49	3.49	109	3.34	< 3.37	3.37
Chromium	6010B	mg/kg	16.9	2.59	24.2	2.45	18.4	2.57	19	2.57	9.57	2.38	22	2.58
Lead	6010B	mg/kg	10.4	0.864	13.6	0.817	17.4	0.856	19.1	0.858	8.59	0.794	16.8	0.858
pH	9045D	SU	5.95	--	5.58	--	6.15	--	6.14	--	4.95	--	5.76	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

September 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			A3A		AA1		B1A		D2A		DD1		E4A	
Sample Date			09/30/09		09/30/09		09/30/09		09/30/09		09/30/09		09/30/09	
Sample Time			7:30		14:00		7:45		8:00		14:15		8:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	18.3	5.54	11.6	5.76	15.8	5.02	12.3	5.55	12.4	6.4	10.7	5.18
Ammonia, Extractable	350.1	mg/kg	1.25	1.19	3	1.22	2.28	1.2	1.84	1.18	1.93	1.27	1.86	1.21
Aluminum	6010B	mg/kg	< 3.56	3.56	29.9	3.66	< 3.6	3.6	< 3.54	3.54	138	3.82	14.2	3.63
Chromium	6010B	mg/kg	15	2.64	20.3	2.71	11.3	2.64	11.4	2.68	16.5	2.64	10.5	2.65
Lead	6010B	mg/kg	9.83	0.879	12.2	0.903	9.98	0.879	11.9	0.893	12.7	0.879	8.42	0.884
pH	9045D	SU	8.43	--	5.19	--	6.28	--	5.78	--	4.93	--	6.11	--

Sample ID			EE1		F3A		G2A		G2B		H1A		H4A	
Sample Date			09/30/09		09/30/09		09/30/09		09/30/09		09/30/09		09/30/09	
Sample Time			13:45		8:30		8:45		8:50		9:00		9:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.31	5.31	22.5	5.71	14.7	5.1	15.1	5.86	19.9	6.13	10.1	5.47
Ammonia, Extractable	350.1	mg/kg	2.63	1.17	14.2	1.17	2.35	1.18	1.94	1.2	1.48	1.19	1.42	1.2
Aluminum	6010B	mg/kg	374	3.52	< 3.51	3.51	< 3.54	3.54	< 3.59	3.59	< 3.56	3.56	6.73	3.6
Chromium	6010B	mg/kg	14.8	2.69	14.7	2.64	12.7	2.64	14.3	2.7	12	2.65	16	2.71
Lead	6010B	mg/kg	19.3	0.898	11.8	0.881	12.2	0.879	13.5	0.9	11.6	0.882	9.45	0.903
pH	9045D	SU	5.13	--	5.79	--	6.28	--	6.2	--	6.08	--	5.64	--

Sample ID			HH1		J3A		L4A		M2A		N1A		N3A	
Sample Date			09/30/09		09/30/09		09/30/09		09/30/09		09/30/09		09/30/09	
Sample Time			13:30		9:30		9:45		10:00		10:15		10:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	10.2	5.93	8.81	5.3	18.1	5.97	17.9	5.34	9.92	6.42	35.1	6.05
Ammonia, Extractable	350.1	mg/kg	3.16	1.18	1.39	1.23	2.78	1.2	1.3	1.22	1.52	1.27	9.29	1.21
Aluminum	6010B	mg/kg	88.2	3.53	< 3.69	3.69	< 3.61	3.61	< 3.65	3.65	< 3.81	3.81	14.7	3.62
Chromium	6010B	mg/kg	15.4	2.45	13	2.67	8.23	2.53	10.7	2.72	11.5	2.93	14.7	2.55
Lead	6010B	mg/kg	8.52	0.817	12.5	0.892	10.9	0.844	11	0.906	32.3	0.975	11.3	0.849
pH	9045D	SU	5.01	--	7.57	--	6.21	--	6.68	--	5.88	--	7.48	--

September 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O4A**		**Q2A**		**S3A**		**T1A**		**T4A**		**U2A**	
Sample Date			**09/30/09**		**09/30/09**		**09/30/09**		**09/30/09**		**09/30/09**		**09/30/09**	
Sample Time			**10:45**		**11:00**		**11:15**		**11:30**		**11:45**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit		Reporting Limit
Ammonia	350.1	mg/kg	18.3	5.26	11	6.02	10.9	5.67	10.2	5.37	9.95	4.85	11	5.28
Ammonia, Extractable	350.1	mg/kg	< 1.17	1.17	< 1.22	1.22	1.41	1.23	1.31	1.15	2.16	1.19	1.83	1.18
Aluminum	6010B	mg/kg	< 3.5	3.5	< 3.67	3.67	< 3.69	3.69	< 3.45	3.45	< 3.56	3.56	320	3.53
Chromium	6010B	mg/kg	17.9	2.56	13.7	2.8	21.2	2.71	23.8	2.57	17	2.61	23.6	2.66
Lead	6010B	mg/kg	14.6	0.854	10.5	0.933	12.4	0.905	13.5	0.856	12.5	0.871	10.6	0.885
pH	9045D	SU	5.96	--	6.65	--	7.75	--	7.7	--	5.69	--	5.96	--

Sample ID			**V4A**		**V4B**		**W3A**		**Y2A**		**Z1A**		**Z4A**	
Sample Date			**09/30/09**		**09/30/09**		**09/30/09**		**09/30/09**		**09/30/09**		**09/30/09**	
Sample Time			**12:15**		**12:20**		**12:30**		**12:45**		**13:00**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	18	5.97	15.3	5.95	17.6	6.2	30.6	6.35	14.6	5.43	13.7	5.24
Ammonia, Extractable	350.1	mg/kg	13.5	1.19	1.44	1.18	1.68	1.25	5.36	1.27	6.27	1.19	1.29	1.15
Aluminum	6010B	mg/kg	< 3.56	3.56	< 3.55	3.55	10.9	3.75	< 3.81	3.81	12.5	3.56	< 3.44	3.44
Chromium	6010B	mg/kg	12.5	2.74	14.8	2.42	22.9	2.71	21.5	2.82	27.4	2.65	20.7	2.58
Lead	6010B	mg/kg	12.8	0.912	14.3	0.807	15	0.902	15.3	0.939	11.6	0.882	14.3	0.859
pH	9045D	SU	5.95	--	5.64	--	6.54	--	6.41	--	5.27	--	5.73	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

October 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**	
Sample Time			**7:15**		**13:45**		**7:30**		**7:45**		**8:00**		**14:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	30.8	6.42	7.24	5.83	14.1	6.08	15	7.11	18	6.14	15.4	6.23
Ammonia, Extractable	350.1	mg/kg	19.5	1.23	< 1.25	1.25	1.8	1.24	< 1.36	1.36	3.58	1.23	3.89	1.26
Aluminum	6010B	mg/kg	< 3.69	3.69	66.4	3.75	< 3.71	3.71	< 4.09	4.09	< 3.7	3.7	123	3.78
Chromium	6010B	mg/kg	22.1	2.54	19	2.56	18.9	2.63	7.99	3.08	15.6	2.67	11.9	2.59
Lead	6010B	mg/kg	15.4	0.846	9.46	0.854	14.3	0.877	14.1	1.03	17.2	0.89	11.7	0.863
pH	9045D	SU	7.35	--	5.2	--	6.02	--	6	--	6.25	--	4.98	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**	
Sample Time			**13:30**		**8:15**		**8:30**		**8:35**		**8:45**		**9:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.45	5.45	16.7	6.61	16.5	5.92	12.8	5.16	16.3	5.74	11.4	4.98
Ammonia, Extractable	350.1	mg/kg	< 1.24	1.24	2.28	1.37	< 1.22	1.22	< 1.26	1.26	3.94	1.25	< 1.28	1.28
Aluminum	6010B	mg/kg	373	3.73	< 4.12	4.12	< 3.66	3.66	< 3.77	3.77	< 3.75	3.75	< 3.84	3.84
Chromium	6010B	mg/kg	19.5	2.67	15.4	3.12	14.3	2.75	13	2.83	18	2.51	16.7	2.82
Lead	6010B	mg/kg	16.6	0.89	14.5	1.04	15.5	0.915	14.6	0.944	12.6	0.838	15.8	0.941
pH	9045D	SU	5.25	--	6.13	--	6.29	--	6.33	--	6.29	--	6.74	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**	
Sample Time			**13:15**		**9:15**		**9:30**		**9:45**		**10:00**		**10:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12.7	6.47	17	6.04	18.5	6.73	8.58	5.4	12.9	5.65	16.4	6.13
Ammonia, Extractable	350.1	mg/kg	4.06	1.24	8.53	1.32	1.58	1.4	5.42	1.23	1.75	1.26	< 1.24	1.24
Aluminum	6010B	mg/kg	34.3	3.73	< 3.95	3.95	< 4.2	4.2	< 3.68	3.68	< 3.78	3.78	< 3.73	3.73
Chromium	6010B	mg/kg	11.1	2.57	12.1	2.94	15.3	2.84	17	2.59	17.7	2.56	15.9	2.83
Lead	6010B	mg/kg	6.84	0.857	10.5	0.979	21.1	0.947	14.5	0.863	17.1	0.854	15.8	0.943
pH	9045D	SU	5.23	--	6.4	--	5.53	--	7.32	--	5.98	--	6.43	--

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**	
Sample Time			**10:30**		**10:45**		**11:00**		**11:15**		**11:30**		**11:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	29	6.63	14.9	7.1	9.53	5.63	12.4	6.7	7.36	6.27	9.31	6.23
Ammonia, Extractable	350.1	mg/kg	1.99	1.22	1.73	1.32	1.4	1.24	1.6	1.28	< 1.21	1.21	1.74	1.21
Aluminum	6010B	mg/kg	< 3.67	3.67	< 3.97	3.97	< 3.72	3.72	< 3.83	3.83	< 3.64	3.64	< 3.63	3.63
Chromium	6010B	mg/kg	18.5	2.67	17.1	2.73	21	2.54	17.6	2.73	26.3	2.79	20.8	2.73
Lead	6010B	mg/kg	15.6	0.891	14.2	0.911	16.9	0.848	17.4	0.911	18.8	0.931	11.2	0.911
pH	9045D	SU	6	--	5.97	--	7.27	--	5.96	--	7.16	--	6.53	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**		**10/27/09**	
Sample Time			**12:00**		**12:05**		**12:15**		**12:30**		**12:45**		**13:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.57	6.54	9.26	6.3	14.6	5.83	8.81	6.61	9.12	5.72	14.7	5.89
Ammonia, Extractable	350.1	mg/kg	< 1.33	1.33	< 1.26	1.26	3.37	1.24	1.83	1.28	2.57	1.25	1.94	1.29
Aluminum	6010B	mg/kg	< 3.99	3.99	< 3.77	3.77	< 3.72	3.72	< 3.84	3.84	< 3.75	3.75	< 3.86	3.86
Chromium	6010B	mg/kg	17.9	2.98	20.7	2.78	13.7	2.6	29.4	2.69	23	2.78	21.7	2.77
Lead	6010B	mg/kg	14.4	0.992	10.7	0.926	8.57	0.868	14.3	0.898	12.9	0.926	14.3	0.923
pH	9045D	SU	6.74	--	6.59	--	6.73	--	6.45	--	5.81	--	5.91	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

November 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			A2A		A4A		AA1		B3A		B4A		DD1	
Sample Date			**11/23/09**		**11/23/09**		**11/23/09**		**11/23/09**		**11/23/09**		**11/23/09**	
Sample Time			**7:15**		**7:30**		**13:45**		**7:45**		**8:00**		**14:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.38	5.65	10.2	6.43	8.77	5.46	13.7	6.82	18.7	6.53	< 6.58	6.58
Ammonia, Extractable	350.1	mg/kg	1.35	1.23	< 1.24	1.24	< 1.29	1.29	3.76	1.3	3.3	1.32	< 1.3	1.3
Aluminum	6010B	mg/kg	8.89	3.69	< 3.72	3.72	86.6	3.87	< 3.91	3.91	< 3.96	3.96	175	3.9
Chromium	6010B	mg/kg	17.3	2.82	17.2	2.8	15.7	2.91	12.2	2.64	10.9	2.99	20.1	2.8
Lead	6010B	mg/kg	11.2	0.942	11	0.935	14.7	0.972	11.9	0.882	19.8	0.996	13.1	0.934
pH	9045D	SU	7.5	--	7.84	--	5.26	--	6.6	--	6.55	--	5.06	--

Sample ID			EE1		F1A		F4A		F4B		G3A		H2A	
Sample Date			**11/23/09**		**11/23/09**		**11/23/09**		**11/23/09**		**11/23/09**		**11/23/09**	
Sample Time			**13:30**		**8:15**		**8:30**		**8:35**		**8:45**		**9:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.12	6.31	14.3	6.39	11	7.03	13.5	7.15	15.1	5.8	15.1	6.01
Ammonia, Extractable	350.1	mg/kg	< 1.26	1.26	2.14	1.22	1.33	1.26	1.31	1.29	1.61	1.25	4.42	1.27
Aluminum	6010B	mg/kg	344	3.77	< 3.66	3.66	< 3.79	3.79	< 3.87	3.87	< 3.75	3.75	6.54	3.82
Chromium	6010B	mg/kg	15.9	2.74	16.2	2.71	15.5	2.62	17.4	2.83	15.8	2.85	12.5	2.84
Lead	6010B	mg/kg	15.7	0.915	13.3	0.904	10.1	0.875	10.8	0.945	13.4	0.95	13.1	0.946
pH	9045D	SU	5.21	--	6.28	--	7.18	--	7.27	--	6.32	--	6.3	--

Sample ID			HH1		I4A		J2A		L1A		L3A		M4A	
Sample Date			**11/23/09**		**11/23/09**		**11/23/09**		**11/23/09**		**11/23/09**		**11/23/09**	
Sample Time			**13:15**		**9:15**		**9:30**		**9:45**		**10:00**		**10:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	5.76	5.71	21.1	6.71	13.1	5.71	12.4	6.13	11.4	6.93	19.3	7.09
Ammonia, Extractable	350.1	mg/kg	4.74	1.24	2.78	1.36	1.64	1.35	< 1.25	1.25	< 1.3	1.3	6.05	1.34
Aluminum	6010B	mg/kg	63.4	3.73	< 4.09	4.09	8.09	4.05	11.6	3.74	< 3.89	3.89	< 4.01	4.01
Chromium	6010B	mg/kg	11.9	2.71	9.71	2.99	9.79	3.03	12.6	2.69	13.6	2.97	17	2.86
Lead	6010B	mg/kg	9.95	0.904	13.3	0.998	11	1.01	13	0.897	10.6	0.989	12.3	0.955
pH	9045D	SU	5.31	--	6.43	--	6.88	--	6.21	--	6.92	--	6.27	--

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Soil Indicator Parameters Data Summary Table
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Orange County, Virginia

Sample ID			N2A		O1A		O3A		P4A		S2A		S4A	
Sample Date			11/23/09		11/23/09		11/23/09		11/23/09		11/23/09		11/23/09	
Sample Time			10:30		10:45		11:00		11:15		11:30		11:45	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.6	6.6	11.3	7.28	10.5	6.9	7.86	6.6	11	6.13	9.75	5.43
Ammonia, Extractable	350.1	mg/kg	< 1.32	1.32	2.84	1.31	< 1.24	1.24	1.68	1.23	1.28	1.26	1.92	1.27
Aluminum	6010B	mg/kg	< 3.97	3.97	< 3.94	3.94	47	3.72	< 3.68	3.68	< 3.79	3.79	5.44	3.82
Chromium	6010B	mg/kg	24	2.96	30	2.66	14.4	2.78	16.6	2.6	22.6	2.84	15.9	2.59
Lead	6010B	mg/kg	15.2	0.988	15.7	0.888	13.5	0.925	12.2	0.867	13.9	0.947	12.6	0.864
pH	9045D	SU	6.62	--	6.68	--	6.23	--	6.12	--	6.56	--	6.15	--

Sample ID			T3A		T3B		U1A		X4A		Y3A		Z2A	
Sample Date			11/23/09		11/23/09		11/23/09		11/23/09		11/23/09		11/23/09	
Sample Time			12:00		12:05		12:15		12:30		12:45		13:00	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.64	6.29	9.02	6.67	31.7	5.64	9.02	6.29	19.2	6.83	14.7	6.84
Ammonia, Extractable	350.1	mg/kg	< 1.38	1.38	< 1.24	1.24	< 1.23	1.23	8.29	1.22	< 1.29	1.29	4.51	1.26
Aluminum	6010B	mg/kg	< 4.14	4.14	11.1	3.71	< 3.7	3.7	188	3.66	< 3.87	3.87	< 3.77	3.77
Chromium	6010B	mg/kg	20.9	2.94	20.2	2.64	25.2	2.8	10.7	2.48	17.1	2.92	24.4	2.81
Lead	6010B	mg/kg	11.1	0.98	13	0.88	16.4	0.932	9.1	0.827	17.4	0.974	19.4	0.938
pH	9045D	SU	6.5	--	6.36	--	5.72	--	5.02	--	6.5	--	5.94	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

December 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A3A**		**AA1**		**B1A**		**D2A**		**DD1**		**E4A**	
Sample Date			**12/15/09**		**12/15/09**		**12/15/09**		**12/15/09**		**12/15/09**		**12/15/09**	
Sample Time			**7:45**		**14:15**		**8:00**		**8:15**		**14:30**		**8:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	10.3	6.22	25.5	6.45	10.5	6.25	8.85	6.48	16.4	6.08	8.64	6.23
Ammonia, Extractable	350.1	mg/kg	2.38	1.24	1.66	1.21	3.08	1.22	3.96	1.31	2.31	1.34	2.65	1.26
Aluminum	6010B	mg/kg	< 3.73	3.73	51.2	3.64	< 3.65	3.65	< 3.92	3.92	123	4.02	< 3.77	3.77
Chromium	6010B	mg/kg	19.5	2.83	16.6	2.81	12.5	2.67	16.6	2.68	18	2.87	13.7	2.62
Lead	6010B	mg/kg	9.87	0.945	10.2	0.935	10.9	0.888	17.3	0.893	13.5	0.958	11.8	0.874
pH	9045C	SU	8.7	--	5.22	--	6.56	--	6.14	--	5.17	--	6.11	--

Sample ID			**F3A**		**G2A**		**G2B**		**H1A**		**H4A**		**HH1**	
Sample Date			**12/15/09**		**12/15/09**		**12/15/09**		**12/15/09**		**12/15/09**		**12/15/09**	
Sample Time			**8:45**		**9:00**		**9:05**		**9:15**		**9:30**		**13:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.33	6.15	14.5	6.72	7.99	6.56	11.3	6.08	12.7	6.29	11	6.2
Ammonia, Extractable	350.1	mg/kg	2.92	1.25	3.06	1.34	3.81	1.32	2.33	1.23	3.42	1.25	1.88	1.22
Aluminum	6010B	mg/kg	17.2	3.74	< 4.03	4.03	< 3.97	3.97	< 3.68	3.68	< 3.74	3.74	70.5	3.67
Chromium	6010B	mg/kg	13.5	2.8	14.5	2.98	21	2.89	18	2.64	17.2	2.69	12.6	2.78
Lead	6010B	mg/kg	13.8	0.934	15	0.993	17.4	0.964	16.4	0.88	12.1	0.898	7.17	0.926
pH	9045C	SU	6.01	--	5.95	--	6.26	--	5.81	--	6.12	--	5.54	--

Sample ID			**J3A**		**L4A**		**M2A**		**N1A**		**N3A**		**O4A**	
Sample Date			**12/15/09**		**12/15/09**		**12/15/09**		**12/15/09**		**12/15/09**		**12/15/09**	
Sample Time			**9:45**		**10:00**		**10:15**		**10:30**		**10:45**		**11:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8	6.48	13.7	6.35	21.7	6.12	< 6.47	6.47	10.5	6.22	12.4	6.2
Ammonia, Extractable	350.1	mg/kg	2.88	1.29	4.95	1.26	7.99	1.25	< 1.31	1.31	3.19	1.24	2.1	1.26
Aluminum	6010B	mg/kg	< 3.87	3.87	< 3.79	3.79	< 3.75	3.75	< 3.94	3.94	< 3.73	3.73	< 3.77	3.77
Chromium	6010B	mg/kg	12.9	2.7	10.4	2.75	17.7	2.88	26	2.71	16.2	2.91	17.3	2.83
Lead	6010B	mg/kg	13.7	0.899	11.7	0.916	17.4	0.96	16.2	0.903	10	0.97	13.3	0.944
pH	9045C	SU	6.65	--	5.79	--	6.23	--	6.06	--	6.42	--	6.61	--

December 2009
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			Q2A		S3A		T1A		T4A		U2A		V4A	
Sample Date			12/15/09		12/15/09		12/15/09		12/15/09		12/15/09		12/15/09	
Sample Time			11:15		11:30		11:45		12:00		12:15		12:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	6.73	6.52	15.8	6.37	9.77	5.8	18.3	5.68	11	5.24	20.1	7.05
Ammonia, Extractable	350.1	mg/kg	1.66	1.22	2.65	1.29	2.26	1.24	4.39	1.28	1.97	1.22	2.94	1.32
Aluminum	6010B	mg/kg	< 3.65	3.65	< 3.86	3.86	< 3.71	3.71	< 3.84	3.84	< 3.66	3.66	< 3.95	3.95
Chromium	6010B	mg/kg	19.5	2.74	20	2.99	20	2.83	12.9	2.96	27.6	2.64	12.1	3.01
Lead	6010B	mg/kg	10.6	0.915	13.4	0.996	11.6	0.943	12.3	0.986	18.9	0.878	9.94	1
pH	9045C	SU	6.65	--	6.8	--	6.04	--	6.72	--	6.09	--	6.05	--

Sample ID			V4B		W3A		Y2A		Z1A		Z4A	
Sample Date			12/15/09		12/15/09		12/15/09		12/15/09		12/15/09	
Sample Time			12:35		12:45		13:00		13:15		13:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	18.5	5.99	19.5	6.12	22.9	6.88	15.6	6	22.9	6.76
Ammonia, Extractable	350.1	mg/kg	4.92	1.3	3.38	1.34	5.51	1.36	2.1	1.26	3.88	1.21
Aluminum	6010B	mg/kg	< 3.89	3.89	< 4.01	4.01	< 4.09	4.09	< 3.79	3.79	< 3.62	3.62
Chromium	6010B	mg/kg	18.1	2.88	15.8	3.06	16.4	2.98	18.8	2.9	15	2.75
Lead	6010B	mg/kg	12.2	0.962	13.3	1.02	10.8	0.994	9.22	0.965	12.3	0.916
pH	9045C	SU	6.09	--	6.45	--	6.36	--	5.72	--	6.06	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

January 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**	
Sample Time			**7:15**		**13:45**		**7:30**		**7:45**		**8:00**		**14:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.89	6.15	10.5	6.16	12.5	6.41	14.5	6.46	17.0	6.49	11.4	6.51
Ammonia, Extractable	350.1	mg/kg	12.8	1.29	2.08	1.26	4.06	1.28	6.67	1.33	29.3	1.33	2.26	1.31
Aluminum	6010B	mg/kg	< 3.86	3.86	66.4	3.79	< 3.84	3.84	< 3.99	3.99	< 3.99	3.99	172	3.92
Chromium	6010B	mg/kg	20.3	2.97	18.2	2.65	22.5	2.92	13.7	3.05	9.88	2.83	21.8	2.81
Lead	6010B	mg/kg	13.6	0.989	11.3	0.882	13.5	0.972	16.8	1.02	9.86	0.942	16.2	0.938
pH	9045D	SU	6.50	--	5.38	--	6.24	--	5.95	--	6.23	--	5.09	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**	
Sample Time			**13:30**		**8:15**		**8:30**		**8:35**		**8:45**		**9:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.45	6.45	15.2	6.70	18.6	6.34	22.8	6.45	22.6	6.42	15.4	6.32
Ammonia, Extractable	350.1	mg/kg	< 1.28	1.28	3.58	1.40	6.21	1.30	5.51	1.31	3.90	1.31	4.68	1.29
Aluminum	6010B	mg/kg	361	3.84	< 4.20	4.20	< 7.78	7.78	< 3.94	3.94	< 3.92	3.92	< 3.88	3.88
Chromium	6010B	mg/kg	19.5	2.89	17.4	3.20	17.7	2.69	23.9	2.99	18.0	2.72	18.7	2.69
Lead	6010B	mg/kg	16.1	0.962	12.9	1.03	15.8	0.897	15.9	0.997	12.1	0.906	13.6	0.896
pH	9045D	SU	5.33	--	5.98	--	6.27	--	6.28	--	6.42	--	6.56	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**	
Sample Time			**13:15**		**9:15**		**9:30**		**9:45**		**10:00**		**10:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.64	6.12	17.2	6.13	13.5	7.10	< 5.95	5.95	7.73	6.68	23.9	6.21
Ammonia, Extractable	350.1	mg/kg	2.64	1.23	4.59	1.25	1.80	1.43	2.07	1.21	30.0	1.40	28.2	1.26
Aluminum	6010B	mg/kg	40.2	3.70	< 3.76	3.76	< 4.29	4.29	< 3.62	3.62	< 4.20	4.20	< 3.79	3.79
Chromium	6010B	mg/kg	9.23	2.78	15.0	2.70	14.6	3.06	15.7	2.62	17.4	3.10	16.0	2.67
Lead	6010B	mg/kg	6.85	0.925	9.12	0.900	17.5	1.02	12.2	0.873	12.2	1.03	13.1	0.890
pH	9045D	SU	5.47	--	6.22	--	5.70	--	6.70	--	6.07	--	6.47	--

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**	
Sample Time			**10:30**		**10:45**		**11:00**		**11:15**		**11:30**		**11:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.3	6.28	15.3	6.62	11.2	6.34	17.3	6.50	< 6.26	6.26	9.77	6.23
Ammonia, Extractable	350.1	mg/kg	3.57	1.26	2.36	1.36	2.17	1.30	3.47	1.32	1.72	1.26	3.43	1.28
Aluminum	6010B	mg/kg	< 3.77	3.77	< 4.07	4.07	< 3.89	3.89	< 3.97	3.97	< 3.77	3.77	< 3.83	3.83
Chromium	6010B	mg/kg	16.6	2.53	17.9	2.99	16.9	2.71	17.4	2.93	23.4	2.71	15.6	2.63
Lead	6010B	mg/kg	14.6	0.845	12.6	0.998	10.7	0.902	16.5	0.976	13.9	0.904	10.4	0.875
pH	9045D	SU	5.97	--	6.06	--	7.38	--	5.89	--	7.03	--	5.93	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**		**01/28/10**	
Sample Time			**12:00**		**12:05**		**12:15**		**12:30**		**12:45**		**13:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	10.9	6.36	11.9	6.18	18.2	6.20	9.95	6.54	15.4	6.28	12.5	6.47
Ammonia, Extractable	350.1	mg/kg	2.32	1.26	3.32	1.23	4.09	1.27	4.46	1.31	5.67	1.26	3.31	1.27
Aluminum	6010B	mg/kg	< 3.77	3.77	< 7.38	7.38	< 3.80	3.80	< 3.92	3.92	< 3.77	3.77	< 3.82	3.82
Chromium	6010B	mg/kg	16.8	2.61	8.84	2.70	19.6	2.57	25.2	2.88	16.2	2.81	13.9	2.8
Lead	6010B	mg/kg	11.0	0.872	6.23	0.900	8.91	0.857	13.7	0.962	14.1	0.937	11.8	0.935
pH	9045D	SU	6.37	--	6.21	--	6.60	--	6.56	--	6.07	--	6.01	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

February 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A2A**		**A4A**		**AA1**		**B3A**		**B4A**		**DD1**	
Sample Date			**02/24/10**		**02/24/10**		**02/24/10**		**02/24/10**		**02/24/10**		**02/24/10**	
Sample Time			**7:45**		**8:00**		**14:30**		**8:15**		**8:30**		**14:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.0	5.99	12.3	6.69	17.7	6.68	13.4	5.72	14.9	8.10	9.89	5.35
Ammonia, Extractable	350.1	mg/kg	2.58	1.28	4.01	1.24	3.53	1.42	3.49	1.45	4.31	1.48	2.61	1.44
Aluminum	6010B	mg/kg	< 3.83	3.83	< 3.71	3.71	86.5	4.25	< 4.34	4.34	< 4.45	4.45	133	4.32
Chromium	6010B	mg/kg	16.1	2.70	19.0	2.60	17.3	3.14	12.1	3.04	13.2	3.27	17.7	3.09
Lead	6010B	mg/kg	10.7	0.901	10.4	0.867	12.2	1.05	12.6	1.01	12.4	1.09	17.8	1.03
pH	9045D	SU	7.00	--	7.26	--	5.07	--	6.44	--	6.64	--	4.89	--

Sample ID			**EE1**		**F1A**		**F4A**		**F4B**		**G3A**		**H2A**	
Sample Date			**02/24/10**		**02/24/10**		**02/24/10**		**02/24/10**		**02/24/10**		**02/24/10**	
Sample Time			**14:15**		**8:45**		**9:00**		**9:05**		**9:15**		**9:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.76	6.76	19.0	7.51	54.9	7.40	16.0	6.76	21.7	7.63	25.7	1.62
Ammonia, Extractable	350.1	mg/kg	1.95	1.46	11.6	1.42	5.47	1.38	4.54	1.36	4.54	1.38	9.50	6.69
Aluminum	6010B	mg/kg	331	4.37	< 4.26	4.26	< 4.14	4.14	< 4.08	4.08	< 4.15	4.15	< 4.87	4.87
Chromium	6010B	mg/kg	14.7	3.37	16.3	3.24	16.2	3.09	16.0	2.84	27.7	2.97	12.2	3.59
Lead	6010B	mg/kg	13.4	1.12	12.0	1.08	9.50	1.03	11.2	0.947	15.1	0.989	12.2	1.20
pH	9045D	SU	5.21	--	6.03	--	6.82	--	6.81	--	6.58	--	6.47	--

Sample ID			**HH1**		**I4A**		**J2A**		**L1A**		**L3A**		**N2A**	
Sample Date			**02/24/10**		**02/24/10**		**02/24/10**		**02/24/10**		**02/24/10**		**02/24/10**	
Sample Time			**14:00**		**9:45**		**10:00**		**10:15**		**10:30**		**11:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	15.1	5.50	14.9	6.90	16.0	6.15	14.7	6.29	8.57	1.34	8.05	6.23
Ammonia, Extractable	350.1	mg/kg	1.53	1.36	8.20	1.46	3.81	1.56	1.84	1.38	2.10	4.94	1.67	1.41
Aluminum	6010B	mg/kg	7.88	4.08	< 8.76	8.87	< 4.67	4.67	< 4.13	4.13	< 4.01	4.01	< 4.23	4.232
Chromium	6010B	mg/kg	4.37	2.94	18.0	3.38	11.7	3.50	13.2	3.14	13.6	2.77	28.8	3.18
Lead	6010B	mg/kg	8.12	0.981	17.5	1.12	14.8	1.17	12.7	1.05	11.7	0.922	21.0	1.06
pH	9045D	SU	5.30	--	5.90	--	6.63	--	6.13	--	6.95	--	5.79	--

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Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O1A**		**O3A**		**P4A**		**S2A**		**S4A**		**T3A**	
Sample Date			**02/24/10**		**02/24/10**		**02/24/10**		**02/24/10**		**02/24/10**		**02/24/10**	
Sample Time			**11:15**		**11:30**		**11:45**		**12:00**		**12:30**		**12:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	10.5	7.39	21.1	6.93	8.32	6.96	14.3	5.98	14.5	7.38	7.83	1.33
Ammonia, Extractable	350.1	mg/kg	2.55	1.38	12.2	1.42	3.76	1.35	3.67	1.30	1.97	1.38	3.15	4.84
Aluminum	6010B	mg/kg	< 4.15	4.15	< 4.25	4.25	< 4.04	4.04	< 3.90	3.90	< 4.15	4.15	< 3.98	3.98
Chromium	6010B	mg/kg	30.7	2.83	16.2	3.25	16.6	3.02	17.9	2.96	10.7	3.03	19.4	2.66
Lead	6010B	mg/kg	18.9	0.944	11.8	1.08	11.9	1.01	12.5	0.988	10.1	1.01	9.76	0.886
pH	9045D	SU	6.09	--	5.70	--	5.58	--	6.06	--	5.54	--	5.88	--

Sample ID			**T3B**		**U1A**		**X4A**		**Y3A**		**Z2A**	
Sample Date			**02/24/10**		**02/24/10**		**02/24/10**		**02/24/10**		**02/24/10**	
Sample Time			**12:50**		**13:00**		**13:15**		**13:30**		**13:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12.4	4.77	18.0	5.84	13.2	5.43	16.7	6.66	17.6	5.57
Ammonia, Extractable	350.1	mg/kg	3.12	1.38	7.93	1.54	2.76	1.37	4.65	1.41	4.64	1.40
Aluminum	6010B	mg/kg	< 4.15	4.15	< 4.62	4.62	155	4.10	< 4.23	4.23	< 4.19	4.19
Chromium	6010B	mg/kg	20.7	3.01	13.1	3.37	15.2	2.83	9.69	3.13	18.6	2.82
Lead	6010B	mg/kg	10.4	1.00	16.5	1.12	8.25	0.945	7.74	1.04	14.7	0.939
pH	9045D	SU	6.37	--	5.40	--	4.91	--	6.27	--	5.80	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

March 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A3A**		**AA1**		**B1A**		**D2A**		**DD1**		**E4A**	
Sample Date			**03/17/10**		**03/17/10**		**03/17/10**		**03/17/10**		**03/17/10**		**03/17/10**	
Sample Time			**7:45**		**14:15**		**8:00**		**8:15**		**14:30**		**8:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.78	6.12	23.7	6.35	27.9	6.63	16.8	6.36	12.2	6.69	13.1	6.50
Ammonia, Extractable	350.1	mg/kg	2.02	1.23	2.51	1.28	5.01	1.35	4.14	1.30	2.34	1.34	2.20	1.32
Aluminum	6010B	mg/kg	< 3.70	3.70	65.0	3.84	< 4.05	4.05	< 3.91	3.91	109	4.02	< 3.95	3.95
Chromium	6010B	mg/kg	23.4	2.56	17.3	2.75	18.0	2.71	17.7	2.84	21.8	2.95	12.1	2.94
Lead	6010B	mg/kg	11.9	0.852	12.2	0.916	10.9	0.905	13.4	0.947	13.0	0.985	8.06	0.947
pH	9045D	SU	8.18	--	5.93	--	6.16	--	8.53	--	6.12	--	6.39	--

Sample ID			**EE1**		**F3A**		**G2A**		**G2B**		**H1A**		**H4A**	
Sample Date			**03/17/10**		**03/17/10**		**03/17/10**		**03/17/10**		**03/17/10**		**03/17/10**	
Sample Time			**14:00**		**8:45**		**9:00**		**9:05**		**9:15**		**9:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.32	6.32	18.2	6.48	13.5	6.53	18.4	6.43	10.5	6.28	17.2	6.36
Ammonia, Extractable	350.1	mg/kg	< 1.27	1.27	4.12	1.30	5.08	1.31	5.63	1.33	2.16	1.27	4.12	1.28
Aluminum	6010B	mg/kg	374	3.81	< 3.89	3.89	< 3.93	3.93	< 3.99	3.99	< 3.81	3.81	< 3.83	3.83
Chromium	6010B	mg/kg	19.3	2.62	23.2	2.73	17.4	2.93	15.9	2.78	21.5	2.63	14.8	2.76
Lead	6010B	mg/kg	15.9	0.873	14.5	0.908	13.7	0.976	12.3	0.927	15.1	0.877	7.51	0.919
pH	9045D	SU	6.18	--	5.74	--	6.21	--	6.26	--	5.87	--	5.63	--

Sample ID			**HH1**		**J3A**		**L4A**		**M2A**		**N1A**		**N3A**	
Sample Date			**03/17/10**		**03/17/10**		**03/17/10**		**03/17/10**		**03/17/10**		**03/17/10**	
Sample Time			**13:45**		**9:45**		**10:00**		**10:15**		**10:30**		**10:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.84	6.00	9.19	6.61	11.6	6.38	19.6	6.25	< 6.25	6.25	16.8	6.39
Ammonia, Extractable	350.1	mg/kg	1.70	1.22	1.57	1.32	2.60	1.30	5.21	1.26	< 1.27	1.27	3.36	1.19
Aluminum	6010B	mg/kg	55.0	3.65	< 3.95	3.95	< 3.91	3.91	< 3.78	3.78	< 3.81	3.81	< 3.86	3.86
Chromium	6010B	mg/kg	18.0	2.54	15.8	2.98	17.7	2.90	20.0	2.90	27.6	2.82	12.6	2.92
Lead	6010B	mg/kg	8.62	0.846	13.9	0.992	12.7	0.967	13.0	0.967	16.7	0.941	9.13	0.974
pH	9045D	SU	5.76	--	7.17	--	6.25	--	6.30	--	5.65	--	7.52	--

March 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			O4A		Q2A		S3A		T1A		T4A		U2A	
Sample Date			03/17/10		03/17/10		03/17/10		03/17/10		03/17/10		03/17/10	
Sample Time			11:00		11:15		11:30		11:45		12:00		12:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16.5	6.41	13.2	6.25	12.8	6.26	13.3	6.38	13.8	6.39	8.39	6.29
Ammonia, Extractable	350.1	mg/kg	3.71	1.29	2.74	1.25	2.43	1.29	2.54	1.28	3.01	1.28	< 1.26	1.26
Aluminum	6010B	mg/kg	< 3.88	3.88	< 3.76	3.76	< 3.87	3.87	< 3.83	3.83	< 3.83	3.83	< 3.78	3.78
Chromium	6010B	mg/kg	26.8	2.82	22.1	2.85	17.0	2.68	25.7	2.84	14.5	2.77	25.4	2.70
Lead	6010B	mg/kg	19.3	0.940	12.2	0.949	10.6	0.894	15.2	0.947	13.4	0.922	13.3	0.901
pH	9045D	SU	6.39	--	6.62	--	7.66	--	6.45	--	6.78	--	6.18	--

Sample ID			V4A		V4B		W3A		Y2A		Z1A		Z4A	
Sample Date			03/17/10		03/17/10		03/17/10		03/17/10		03/17/10		03/17/10	
Sample Time			12:30		12:35		12:45		13:00		13:15		13:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	15.5	6.38	18.5	6.53	22.5	6.86	15.4	6.53	12.9	6.16	26.1	6.33
Ammonia, Extractable	350.1	mg/kg	2.65	1.28	3.08	1.31	5.62	1.38	4.35	1.33	1.97	1.26	5.45	1.28
Aluminum	6010B	mg/kg	< 3.85	3.85	< 3.94	3.94	< 4.14	4.14	< 3.99	3.99	< 3.79	3.79	< 3.85	3.85
Chromium	6010B	mg/kg	16.9	2.81	21.5	2.74	18.8	2.78	23.3	2.71	21.6	2.77	21.6	2.74
Lead	6010B	mg/kg	14.3	0.938	16.2	0.914	14.2	0.927	13.1	0.903	12.8	0.922	17.5	0.913
pH	9045D	SU	8.67	--	8.31	--	7.10	--	7.56	--	5.64	--	5.94	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

April 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**	
Sample Time			**7:00**		**13:30**		**7:15**		**7:30**		**7:45**		**13:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.8	6.41	12.9	6.74	10.1	6.14	14.4	5.94	14.7	5.86	12.1	5.20
Ammonia, Extractable	350.1	mg/kg	2.19	1.24	1.62	1.31	1.32	1.22	2.09	1.22	3.51	1.24	2.62	1.26
Aluminum	6010B	mg/kg	< 3.72	3.72	84.4	3.92	< 3.65	3.65	< 3.66	3.66	< 3.72	3.72	110	3.77
Chromium	6010B	mg/kg	17.5	2.69	12.3	2.96	15.5	2.75	8.45	2.65	12.6	2.87	10.7	2.75
Lead	6010B	mg/kg	13.3	0.897	10.4	0.985	11.3	0.915	16.5	0.883	14.6	0.957	15.7	0.918
pH	9045D	SU	6.88	--	4.87	--	6.39	--	5.94	--	6.01	--	4.78	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**	
Sample Time			**13:15**		**8:00**		**8:15**		**8:20**		**8:30**		**8:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.68	5.68	17.3	6.57	23.5	5.77	16.4	5.42	16.7	5.50	14.7	5.75
Ammonia, Extractable	350.1	mg/kg	1.35	1.24	2.03	1.32	2.80	1.20	1.85	1.20	3.75	1.22	1.50	1.26
Aluminum	6010B	mg/kg	430	3.71	< 3.95	3.95	< 3.59	3.59	< 3.59	3.59	< 3.66	3.66	< 3.78	3.78
Chromium	6010B	mg/kg	14.7	2.52	15.7	2.73	11.1	2.53	15.0	2.74	14.6	2.79	13.3	2.82
Lead	6010B	mg/kg	13.6	0.841	11.8	0.909	12.2	0.844	13.0	0.913	10.7	0.929	12.0	0.941
pH	9045D	SU	4.84	--	5.68	--	6.11	--	6.08	--	5.87	--	6.55	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**	
Sample Time			**13:00**		**9:00**		**9:15**		**9:30**		**9:45**		**10:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	13.7	5.76	17.2	6.16	13.5	6.01	7.11	5.73	14.7	6.51	11.4	5.34
Ammonia, Extractable	350.1	mg/kg	6.13	1.25	1.68	1.25	5.92	1.48	< 1.18	1.18	2.52	1.39	1.61	1.24
Aluminum	6010B	mg/kg	34.0	3.76	< 3.74	3.74	< 4.44	4.44	< 3.55	3.55	< 4.16	4.16	< 3.72	3.72
Chromium	6010B	mg/kg	6.24	2.59	15.9	2.57	8.91	3.19	10.4	2.62	16.0	3.20	16.4	2.70
Lead	6010B	mg/kg	4.87	0.864	9.29	0.857	14.2	1.06	8.41	0.872	12.1	1.07	11.2	0.899
pH	9045D	SU	5.04	--	5.87	--	5.59	--	7.17	--	5.76	--	6.20	--

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Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**	
Sample Time			**10:15**		**10:30**		**10:45**		**11:00**		**11:15**		**11:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	13.4	5.30	15.4	5.90	9.99	5.43	10.6	6.23	8.50	6.11	9.68	4.71
Ammonia, Extractable	350.1	mg/kg	2.28	1.20	2.04	1.28	< 1.21	1.21	4.97	1.22	< 1.22	1.22	2.25	1.24
Aluminum	6010B	mg/kg	< 3.59	3.59	< 3.83	3.83	< 3.63	3.63	< 3.65	3.65	< 3.65	3.65	< 3.71	3.71
Chromium	6010B	mg/kg	17.1	2.57	15.7	2.74	19.8	2.64	13.5	2.73	23.8	2.73	13.7	2.73
Lead	6010B	mg/kg	12.9	0.858	11.1	0.913	12.0	0.880	14.4	0.909	13.6	0.908	8.75	0.910
pH	9045D	SU	5.95	--	5.75	--	7.00	--	5.78	--	7.42	--	6.34	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**		**04/27/10**	
Sample Time			**11:45**		**11:50**		**12:00**		**12:15**		**12:30**		**12:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.37	5.00	9.50	6.34	17.1	6.18	6.91	4.98	13.8	5.52	12.4	6.57
Ammonia, Extractable	350.1	mg/kg	< 1.18	1.18	< 1.20	1.20	4.30	1.26	2.17	1.22	3.01	1.22	2.23	1.19
Aluminum	6010B	mg/kg	< 3.54	3.54	< 3.61	3.61	< 3.79	3.79	< 3.67	3.67	< 3.65	3.65	< 3.58	3.58
Chromium	6010B	mg/kg	12.7	2.67	13.7	2.73	8.24	2.90	22.9	2.83	11.2	2.72	13.9	5.76
Lead	6010B	mg/kg	8.92	0.889	9.58	0.909	7.65	0.967	13.5	0.944	9.82	0.908	12.7	1.25
pH	9045D	SU	6.34	--	6.20	--	6.27	--	6.12	--	5.63	--	5.73	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit
NA = Not Analyzed

May 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A2A**		**A4A**		**AA1**		**B3A**		**B4A**		**DD1**	
Sample Date			**05/27/10**		**05/27/10**		**05/27/10**		**05/27/10**		**05/27/10**		**05/27/10**	
Sample Time			**7:00**		**7:15**		**13:15**		**7:30**		**7:45**		**13:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12.4	6.14	10.8	6.12	9.76	5.85	11.5	5.77	17.8	6.06	9.94	6.83
Ammonia, Extractable	350.1	mg/kg	3.35	1.19	< 1.18	1.18	2.64	1.24	1.83	1.20	4.20	1.23	2.90	1.29
Aluminum	6010B	mg/kg	< 3.57	3.57	< 3.55	3.55	95.0	3.73	< 3.59	3.59	< 3.70	3.70	135	3.88
Chromium	6010B	mg/kg	16.3	2.63	16.1	2.49	23.7	2.56	10.0	2.44	10.1	2.72	15.2	2.59
Lead	6010B	mg/kg	9.49	0.876	12.8	0.830	11.7	0.854	10.8	0.812	11.9	0.906	16.0	0.862
pH	9045D	SU	6.67	--	7.70	--	6.61	--	6.02	--	6.34	--	5.85	--

Sample ID			**EE1**		**F1A**		**F4A**		**F4B**		**G3A**		**H2A**	
Sample Date			**05/27/10**		**05/27/10**		**05/27/10**		**05/27/10**		**05/27/10**		**05/27/10**	
Sample Time			**13:00**		**8:00**		**8:15**		**8:20**		**8:30**		**8:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 4.80	4.80	10.6	4.93	16.0	6.54	14.8	5.79	20.0	5.50	16.5	6.18
Ammonia, Extractable	350.1	mg/kg	< 1.23	1.23	1.20	1.20	2.51	1.24	2.56	1.25	2.58	1.22	2.03	1.30
Aluminum	6010B	mg/kg	344	3.69	21.0	3.60	< 3.71	3.71	< 3.74	3.74	< 3.67	3.67	< 3.90	3.90
Chromium	6010B	mg/kg	14.8	2.66	13.6	2.50	13.2	2.75	14.2	2.70	20.6	2.66	8.57	2.66
Lead	6010B	mg/kg	15.2	0.886	12.3	0.833	10.0	0.916	11.9	0.900	14.4	0.885	13.9	0.886
pH	9045D	SU	4.95	--	5.83	--	6.70	--	6.60	--	6.17	--	6.14	--

Sample ID			**HH1**		**I4A**		**J2A**		**L1A**		**L3A**		**N2A**	
Sample Date			**05/27/10**		**05/27/10**		**05/27/10**		**05/27/10**		**05/27/10**		**05/27/10**	
Sample Time			**12:45**		**9:00**		**9:15**		**9:30**		**9:45**		**10:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.49	5.82	15.5	6.14	11.0	6.11	12.5	6.13	13.3	6.25	15.5	4.70
Ammonia, Extractable	350.1	mg/kg	1.86	1.23	2.79	1.26	1.98	1.25	< 1.23	1.23	1.76	1.27	7.42	1.18
Aluminum	6010B	mg/kg	114	3.69	< 3.78	3.78	< 3.74	3.74	< 3.69	3.69	< 3.80	3.80	< 3.54	3.54
Chromium	6010B	mg/kg	11.8	2.61	9.68	5.56	12.6	2.83	12.6	2.82	11.5	2.72	9.79	2.42
Lead	6010B	mg/kg	7.36	0.871	13.6	1.85	19.4	0.942	13.1	0.939	10.7	0.906	11.4	0.805
pH	9045D	SU	5.01	--	6.41	--	6.58	--	5.96	--	6.20	--	6.47	--

May 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			O1A		O3A		P4A		S2A		S4A		T3A	
Sample Date			**05/27/10**		**05/27/10**		**05/27/10**		**05/27/10**		**05/27/10**		**05/27/10**	
Sample Time			**10:15**		**10:30**		**10:45**		**11:00**		**11:15**		**11:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.4	6.08	9.68	5.63	11.4	6.02	10.1	5.70	11.9	6.00	9.85	1.21
Ammonia, Extractable	350.1	mg/kg	2.53	1.25	1.60	1.21	1.57	1.21	1.65	1.18	2.46	1.20	1.91	5.95
Aluminum	6010B	mg/kg	19.3	3.74	< 3.63	3.63	< 3.63	3.63	< 3.55	3.55	< 3.61	3.61	< 3.63	3.63
Chromium	6010B	mg/kg	33.1	2.64	17.7	2.47	16.0	2.70	19.0	2.69	14.6	2.47	15.9	2.67
Lead	6010B	mg/kg	14.6	0.879	11.4	0.823	10.9	0.901	12.7	0.895	12.2	0.823	9.29	0.890
pH	9045D	SU	5.44	--	5.61	--	6.16	--	6.28	--	5.59	--	5.79	--

Sample ID			T3B		U1A		X4A		Y3A		Z2A	
Sample Date			**05/27/10**		**05/27/10**		**05/27/10**		**05/27/10**		**05/27/10**	
Sample Time			**11:35**		**11:45**		**12:00**		**12:15**		**12:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	10.3	6.34	6.92	5.09	6.08	5.40	17.7	5.92	16.1	5.88
Ammonia, Extractable	350.1	mg/kg	2.16	1.21	1.68	1.21	< 1.16	1.16	4.92	1.21	2.34	1.20
Aluminum	6010B	mg/kg	< 3.62	3.62	6.55	3.64	150	3.48	< 3.63	3.63	< 3.59	3.59
Chromium	6010B	mg/kg	16.7	2.48	24.8	2.76	9.56	2.37	16.1	2.59	16.6	2.53
Lead	6010B	mg/kg	8.48	0.828	13.5	0.921	7.71	0.789	14.9	0.864	13.2	0.843
pH	9045D	SU	5.77	--	5.38	--	4.78	--	5.92	--	5.65	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

June 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A3A**		**AA1**		**B1A**		**D2A**		**DD1**		**E4A**	
Sample Date			**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**	
Sample Time			**6:30**		**13:00**		**6:45**		**7:00**		**13:15**		**7:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.95	5.90	13.1	6.02	18.8	5.92	9.01	5.97	16.3	6.18	12.0	5.90
Ammonia, Extractable	350.1	mg/kg	< 1.19	1.19	9.92	1.20	3.70	1.19	1.96	1.19	2.93	1.25	2.04	1.19
Aluminum	6010B	mg/kg	< 3.56	3.56	80.8	3.62	< 3.58	3.58	46.0	3.57	112	3.74	< 3.56	3.56
Chromium	6010B	mg/kg	16.8	2.49	20.8	2.48	11.6	2.66	18.2	2.71	12.6	2.60	10.5	2.64
Lead	6010B	mg/kg	9.86	0.830	14.3	0.826	11.2	0.886	11.6	0.903	12.4	0.866	8.50	0.881
pH	9045D	SU	8.04	--	5.04	--	6.53	--	5.48	--	4.74	--	6.11	--

Sample ID			**EE1**		**F3A**		**G2A**		**G2B**		**H1A**		**H4A**	
Sample Date			**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**	
Sample Time			**12:45**		**7:30**		**7:45**		**7:50**		**8:00**		**8:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.84	6.43	15.9	5.73	15.3	6.06	17.1	6.01	15.1	6.18	11.6	6.07
Ammonia, Extractable	350.1	mg/kg	1.71	1.28	4.12	1.15	1.36	1.22	< 1.20	1.20	1.70	1.24	3.11	1.22
Aluminum	6010B	mg/kg	322	3.84	7.08	3.44	< 3.65	3.65	< 3.60	3.60	< 3.73	3.73	< 3.67	3.67
Chromium	6010B	mg/kg	20.5	2.59	11.8	2.60	11.8	2.81	9.04	2.70	14.7	2.51	13.9	2.78
Lead	6010B	mg/kg	16.4	0.862	12.2	0.868	11.9	0.937	10.6	0.901	12.1	0.838	9.10	0.927
pH	9045D	SU	4.91	--	5.58	--	6.14	--	6.31	--	5.75	--	5.89	--

Sample ID			**HH1**		**J3A**		**L4A**		**M2A**		**N1A**		**N3A**	
Sample Date			**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**	
Sample Time			**12:30**		**8:30**		**8:45**		**9:00**		**9:15**		**9:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	11.8	5.94	9.39	6.04	16.5	5.90	17.4	5.95	8.17	6.14	15.2	5.98
Ammonia, Extractable	350.1	mg/kg	3.56	1.20	< 1.22	1.22	2.48	1.18	2.26	1.19	< 1.25	1.25	< 1.20	1.20
Aluminum	6010B	mg/kg	45.4	3.61	< 3.66	3.66	< 3.55	3.55	< 3.56	3.56	< 3.74	3.74	< 3.59	3.59
Chromium	6010B	mg/kg	10.1	2.43	12.6	2.74	7.15	2.61	12.7	2.75	16.3	2.78	12.6	2.72
Lead	6010B	mg/kg	7.86	0.811	11.4	0.914	9.47	0.868	13.4	0.918	15.1	0.927	10.5	0.907
pH	9045D	SU	5.01	--	6.89	--	6.27	--	6.22	--	5.90	--	7.24	--

June 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O4A**		**Q2A**		**S3A**		**T1A**		**T4A**		**U2A**	
Sample Date			**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**	
Sample Time			**9:45**		**10:00**		**10:15**		**10:30**		**10:45**		**11:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.2	5.82	16.2	5.96	16.7	5.89	13.6	5.83	19.6	5.85	17.4	5.96
Ammonia, Extractable	350.1	mg/kg	1.49	1.17	1.36	1.21	1.74	1.19	1.94	1.17	2.79	1.17	1.43	1.20
Aluminum	6010B	mg/kg	< 3.52	3.52	5.68	3.62	< 3.58	3.58	< 3.51	3.51	< 3.50	3.50	< 3.60	3.60
Chromium	6010B	mg/kg	12.8	2.68	11.4	2.70	15.6	2.70	19.7	2.58	11.9	2.63	21.3	2.46
Lead	6010B	mg/kg	12.0	0.895	8.35	0.898	11.1	0.901	12.7	0.860	13.4	0.877	10.0	0.821
pH	9045D	SU	6.00	--	6.12	--	7.26	--	5.81	--	6.20	--	6.45	--

Sample ID			**V4A**		**V4B**		**W3A**		**Y2A**		**Z1A**		**Z4A**	
Sample Date			**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**		**06/17/10**	
Sample Time			**11:15**		**11:20**		**11:30**		**11:45**		**12:00**		**12:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	18.1	5.82	13.6	5.84	14.4	6.10	24.0	6.00	15.2	5.91	17.1	5.49
Ammonia, Extractable	350.1	mg/kg	2.29	1.16	3.65	1.18	1.47	1.23	16.0	1.21	3.03	1.19	1.86	1.12
Aluminum	6010B	mg/kg	< 3.47	3.47	4.29	3.53	< 3.69	3.69	< 3.63	3.63	3.91	3.56	< 3.35	3.35
Chromium	6010B	mg/kg	11.6	2.57	17.2	2.41	18.6	2.63	16.0	2.49	20.5	2.47	15.9	2.35
Lead	6010B	mg/kg	11.8	0.858	13.2	0.803	14.0	0.877	13.1	0.829	11.6	0.825	13.3	0.783
pH	9045D	SU	5.76	--	5.96	--	6.59	--	6.18	--	5.49	--	5.80	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

July 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**	
Sample Time			**6:30**		**13:00**		**6:45**		**7:00**		**7:15**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	26.7	4.97	19.6	5.18	28.0	4.62	19.4	4.68	23.2	5.73	20.3	5.26
Ammonia, Extractable	350.1	mg/kg	5.14	1.07	4.17	1.12	6.52	0.533	4.26	1.04	4.51	1.05	6.87	1.13
Aluminum	6010B	mg/kg	< 3.20	3.20	148	3.35	< 3.20	3.20	3.40	3.11	< 3.16	3.16	151	3.38
Chromium	6010B	mg/kg	14.9	2.22	19.3	2.42	15.9	2.42	8.05	2.33	20.9	2.40	11.5	2.58
Lead	6010B	mg/kg	10.6	0.740	12.8	0.806	10.4	0.807	14.4	0.777	12.3	0.799	18.2	0.860
pH	9045D	SU	6.52	--	4.97	--	6.34	--	5.74	--	5.70	--	4.76	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**	
Sample Time			**12:45**		**7:30**		**7:45**		**7:50**		**8:00**		**8:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.05	4.78	20.3	5.36	28.7	5.34	25.9	4.96	24.1	4.60	24.8	5.31
Ammonia, Extractable	350.1	mg/kg	5.36	1.11	3.93	1.11	6.09	1.06	6.00	1.05	5.29	1.06	5.22	1.09
Aluminum	6010B	mg/kg	346	3.34	< 3.34	3.34	< 3.18	3.18	< 3.15	3.15	< 3.19	3.19	< 3.26	3.26
Chromium	6010B	mg/kg	15.0	2.30	16.2	2.49	12.9	2.42	12.9	2.31	15.2	2.28	16.9	2.43
Lead	6010B	mg/kg	13.8	0.768	10.7	0.828	11.9	0.808	12.6	0.771	11.4	0.761	11.7	0.809
pH	9045D	SU	4.95	--	5.84	--	5.85	--	5.80	--	6.16	--	6.57	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**	
Sample Time			**12:30**		**8:30**		**8:45**		**9:00**		**9:15**		**9:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12.7	4.27	28.2	5.14	25.3	6.64	12.1	5.44	19.3	5.08	18.6	4.43
Ammonia, Extractable	350.1	mg/kg	5.97	1.06	5.30	1.04	3.13	1.29	2.25	1.03	3.80	1.11	3.86	1.06
Aluminum	6010B	mg/kg	90.7	3.18	< 3.13	3.13	4.21	3.87	< 3.08	3.08	< 3.33	3.33	< 3.17	3.17
Chromium	6010B	mg/kg	7.89	2.38	13.1	2.24	10.9	2.79	15.4	2.24	12.8	2.39	10.6	2.35
Lead	6010B	mg/kg	8.79	0.793	10.6	0.747	15.9	0.930	11.3	0.747	13.2	0.797	8.26	0.782
pH	9045D	SU	4.90	--	5.97	--	5.76	--	6.94	--	5.95	--	6.49	--

July 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**	
Sample Time			**9:45**		**10:00**		**10:15**		**10:30**		**10:45**		**11:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	32.1	4.93	17.4	5.50	18.5	5.61	32.1	5.29	19.4	4.98	22.4	5.49
Ammonia, Extractable	350.1	mg/kg	7.66	1.12	3.48	1.10	7.14	1.07	5.33	1.10	6.72	1.07	2.09	1.05
Aluminum	6010B	mg/kg	< 3.37	3.37	3.60	3.30	< 3.21	3.21	6.51	3.30	< 3.22	3.22	< 3.15	3.15
Chromium	6010B	mg/kg	15.5	2.55	17.7	2.46	16.9	2.39	21.6	2.52	15.4	2.18	12.8	2.28
Lead	6010B	mg/kg	13.7	0.850	11.2	0.822	9.87	0.797	14.2	0.840	10.1	0.726	9.58	0.761
pH	9045D	SU	5.96	--	5.82	--	7.28	--	5.42	--	7.25	--	5.98	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**		**07/29/10**	
Sample Time			**11:15**		**11:20**		**11:30**		**11:45**		**12:00**		**12:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	29.3	4.91	29.6	5.23	29.3	4.57	25.2	5.40	22.6	4.98	28.0	5.35
Ammonia, Extractable	350.1	mg/kg	7.61	1.04	7.65	1.04	6.08	1.05	5.89	1.07	7.69	1.07	5.97	1.07
Aluminum	6010B	mg/kg	3.52	3.12	< 3.12	3.12	< 3.16	3.16	4.10	3.22	3.66	3.21	< 3.22	3.22
Chromium	6010B	mg/kg	10.6	2.33	12.5	2.20	11.9	2.42	23.1	2.30	13.0	2.28	19.2	2.33
Lead	6010B	mg/kg	8.72	0.778	8.99	0.732	9.08	0.805	11.6	0.765	10.9	0.761	14.9	0.777
pH	9045D	SU	6.40	--	6.01	--	6.42	--	6.34	--	5.51	--	5.35	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

August 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A2A**		**A4A**		**AA1**		**B3A**		**B4A**		**DD1**	
Sample Date			**08/19/10**		**08/19/10**		**08/19/10**		**08/19/10**		**08/19/10**		**08/19/10**	
Sample Time			**6:45**		**7:00**		**14:00**		**7:15**		**7:30**		**14:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	21.2	5.80	13.6	5.88	16.4	6.17	52.0	5.96	18.4	5.94	11.2	6.02
Ammonia, Extractable	350.1	mg/kg	4.45	1.18	1.92	1.18	4.84	1.25	22.9	1.17	2.43	1.22	2.99	1.22
Aluminum	6010B	mg/kg	<3.54	3.54	4.04	3.54	83.8	3.73	<3.53	3.53	<3.57	3.57	42.0	3.60
Chromium	6010B	mg/kg	17.9	2.59	21.6	2.72	14.3	2.75	16.1	2.67	18.9	2.75	13.9	2.68
Lead	6010B	mg/kg	13.0	0.864	17.2	0.906	17.8	0.916	17.3	0.891	14.8	0.918	13.5	0.894
pH	9045D	SU	6.12	--	7.00	--	4.12	--	5.75	--	5.75	--	4.10	--

Sample ID			**EE1**		**F1A**		**F4A**		**G3A**		**G3B**		**H2A**	
Sample Date			**08/19/10**		**08/19/10**		**08/19/10**		**08/19/10**		**08/19/10**		**08/19/10**	
Sample Time			**13:45**		**7:45**		**8:00**		**9:15**		**9:20**		**9:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.55	6.06	15.8	5.77	16.4	5.99	20.6	5.94	16.2	5.88	13.6	6.25
Ammonia, Extractable	350.1	mg/kg	1.49	1.22	<1.17	1.17	1.51	1.22	<1.19	1.19	<1.17	1.17	1.94	1.25
Aluminum	6010B	mg/kg	285	3.59	<3.45	3.45	<3.61	3.61	<3.54	3.54	<3.52	3.52	<3.67	3.67
Chromium	6010B	mg/kg	15.9	2.48	13.7	2.63	20.1	2.72	18.7	2.43	22.4	2.58	11.0	2.69
Lead	6010B	mg/kg	17.2	0.827	14.5	0.875	17.3	0.907	16.6	0.811	14.5	0.859	15.7	0.897
pH	9045D	SU	4.71	--	4.94	--	6.36	--	5.86	--	5.59	--	5.46	--

Sample ID			**HH1**		**I4A**		**J2A**		**L1A**		**L3A**		**N2A**	
Sample Date			**08/19/10**		**08/19/10**		**08/19/10**		**08/19/10**		**08/19/10**		**08/19/10**	
Sample Time			**13:30**		**9:45**		**10:00**		**10:15**		**10:30**		**10:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	15.1	5.97	21.9	6.20	15.8	6.29	29.8	6.14	9.77	6.32	8.25	6.11
Ammonia, Extractable	350.1	mg/kg	1.71	1.22	3.41	1.23	2.34	1.29	1.35	1.21	<1.28	1.28	<1.23	1.23
Aluminum	6010B	mg/kg	54.4	3.57	<3.73	3.73	<3.87	3.87	<3.67	3.67	<3.84	3.84	<3.59	3.59
Chromium	6010B	mg/kg	12.5	2.48	17.5	2.61	14.1	2.85	16.3	2.55	14.7	2.77	32.0	2.56
Lead	6010B	mg/kg	8.75	0.828	18.3	0.870	16.7	0.950	16.5	0.848	11.9	0.925	18.7	0.853
pH	9045D	SU	4.50	--	5.65	--	5.72	--	5.16	--	5.76	--	5.22	--

Sample ID			**O1A**		**O3A**		**P4A**		**S2A**		**S4A**		**T3A**	
Sample Date			**08/19/10**		**08/19/10**		**08/19/10**		**08/19/10**		**08/19/10**		**08/19/10**	
Sample Time			**11:00**		**11:15**		**11:30**		**11:45**		**12:00**		**12:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	18.8	5.96	16.6	5.96	12.0	5.92	15.0	5.85	17.6	6.01	15.9	5.99
Ammonia, Extractable	350.1	mg/kg	5.19	1.20	1.79	1.20	1.90	1.19	<1.16	1.16	3.13	1.20	2.71	1.18
Aluminum	6010B	mg/kg	<3.61	3.61	4.14	3.62	<3.52	3.52	3.49	3.47	4.41	3.59	<3.55	3.55
Chromium	6010B	mg/kg	24.3	2.62	14.1	2.70	19.2	2.47	20.1	2.44	13.9	2.73	17.7	2.68
Lead	6010B	mg/kg	16.5	0.872	12.0	0.900	13.3	0.824	16.0	0.814	12.3	0.911	13.0	0.892
pH	9045D	SU	5.46	--	5.07	--	5.48	--	5.10	--	5.22	--	5.03	--

August 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**U1A**		**X4A**		**Y3A**		**Y3B**		**Z2A**	
Sample Date			**08/19/10**		**08/19/10**		**08/19/10**		**08/19/10**		**08/19/10**	
Sample Time			**12:30**		**12:45**		**13:00**		**13:05**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16.2	6.11	27.7	5.95	26.8	6.06	39.3	5.97	9.37	5.76
Ammonia, Extractable	350.1	mg/kg	4.33	1.23	6.90	1.20	8.82	1.22	14.8	1.21	< 1.15	1.15
Aluminum	6010B	mg/kg	4.32	0.308	< 3.55	3.55	< 3.65	3.65	< 3.63	3.63	111	3.45
Chromium	6010B	mg/kg	28.5	2.54	23.2	2.46	16.8	2.78	17.0	2.62	12.4	2.32
Lead	6010B	mg/kg	16.6	0.847	15.8	0.821	18.8	0.928	18.0	0.875	9.62	0.774
pH	9045D	SU	4.83	--	4.93	--	5.33	--	5.33	--	4.26	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

September 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A3A**		**AA1**		**B1A**		**D2A**		**DD1**		**E4A**	
Sample Date			**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**	
Sample Time			**6:30**		**15:45**		**6:45**		**7:00**		**16:00**		**7:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	24.6	6.14	14.2	5.96	24.9	6.10	20.6	5.84	23.6	6.23	16.6	5.85
Ammonia, Extractable	350.1	mg/kg	3.22	1.23	5.50	1.21	10.1	1.21	5.48	1.21	7.22	1.25	2.21	1.20
Aluminum	6010B	mg/kg	< 3.68	3.68	57.2	3.62	< 3.64	3.64	< 3.64	3.64	118	3.75	< 3.61	3.61
Chromium	6010B	mg/kg	17.4	2.81	13.9	2.70	13.3	2.50	13.1	2.69	12.7	2.78	10.7	2.59
Lead	6010B	mg/kg	10.7	0.936	12.9	0.901	10.8	0.833	12.8	0.896	18.8	0.927	10.2	0.864
pH	9045D	SU	7.91	--	5.25	--	6.67	--	5.83	--	4.83	--	6.06	--

Sample ID			**EE1**		**F3A**		**G2A**		**G2B**		**H1A**		**H4A**	
Sample Date			**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**	
Sample Time			**15:30**		**7:30**		**7:45**		**7:50**		**8:00**		**8:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 6.18	6.18	17.9	5.95	18.6	6.25	20.7	6.02	17.9	5.98	20.4	6.06
Ammonia, Extractable	350.1	mg/kg	< 1.24	1.24	5.52	1.20	5.82	1.26	2.78	1.22	1.77	1.20	2.88	1.22
Aluminum	6010B	mg/kg	278	3.72	4.50	3.61	< 3.77	3.77	< 3.67	3.67	< 3.60	3.60	< 3.65	3.65
Chromium	6010B	mg/kg	16.7	2.82	13.1	2.47	16.6	2.60	14.8	2.80	14.0	2.77	16.0	2.68
Lead	6010B	mg/kg	15.4	0.940	12.6	0.824	14.3	0.866	13.4	0.933	12.5	0.923	10.9	0.892
pH	9045D	SU	4.93	--	5.37	--	5.68	--	5.69	--	5.50	--	5.84	--

Sample ID			**HH1**		**J3A**		**L4A**		**M2A**		**N1A**		**N3A**	
Sample Date			**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**	
Sample Time			**15:15**		**8:30**		**8:45**		**9:00**		**9:15**		**9:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.83	5.83	12.7	5.92	16.6	6.09	17.9	6.20	9.06	6.29	20.4	6.08
Ammonia, Extractable	350.1	mg/kg	2.71	1.18	< 1.21	1.21	3.46	1.23	2.17	1.24	< 1.27	1.27	< 1.22	1.22
Aluminum	6010B	mg/kg	71.1	3.53	< 3.64	3.64	< 3.70	3.70	< 3.72	3.72	< 3.82	3.82	< 3.66	3.66
Chromium	6010B	mg/kg	7.52	2.59	9.10	2.51	12.6	2.54	13.4	2.62	20.1	2.58	20.1	2.63
Lead	6010B	mg/kg	9.36	0.864	10.2	0.837	11.7	0.848	14.1	0.874	31.6	0.862	11.9	0.875
pH	9045D	SU	4.96	--	6.64	--	6.48	--	6.17	--	6.43	--	7.29	--

September 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O4A**		**Q2A**		**S3A**		**T1A**		**T4A**		**U2A**	
Sample Date			**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**	
Sample Time			**9:45**		**10:00**		**10:15**		**10:30**		**10:45**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16.9	5.91	14.5	6.13	50.6	6.19	17.4	6.14	19.1	6.06	12.6	5.88
Ammonia, Extractable	350.1	mg/kg	2.10	1.21	1.90	1.23	15.2	1.24	4.06	1.24	4.89	1.21	2.06	1.19
Aluminum	6010B	mg/kg	< 3.62	3.62	< 3.69	3.69	< 3.73	3.73	< 3.71	3.71	< 3.63	3.63	< 3.58	3.58
Chromium	6010B	mg/kg	18.6	2.69	19.7	2.75	20.2	2.85	18.3	2.75	9.37	2.68	20.5	2.69
Lead	6010B	mg/kg	14.1	0.895	10.5	0.917	13.9	0.951	12.4	0.916	11.0	0.894	10.1	0.897
pH	9045D	SU	6.20	--	6.70	--	7.65	--	6.26	--	6.27	--	6.80	--

Sample ID			**V4A**		**V4B**		**W3A**		**Y2A**		**Z1A**		**Z4A**	
Sample Date			**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**		**09/29/10**	
Sample Time			**12:15**		**12:20**		**12:30**		**12:45**		**13:00**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	17.8	6.02	20.0	6.06	47.2	6.09	22.5	6.08	18.4	6.04	13.6	5.94
Ammonia, Extractable	350.1	mg/kg	1.25	1.20	1.24	1.22	3.24	1.24	9.80	1.22	4.64	1.21	1.20	1.19
Aluminum	6010B	mg/kg	< 3.60	3.60	< 3.65	3.65	< 3.71	3.71	< 3.66	3.66	4.88	3.62	< 3.58	3.58
Chromium	6010B	mg/kg	10.1	2.73	15.6	2.74	15.5	2.80	13.7	2.77	20.3	2.77	14.9	2.74
Lead	6010B	mg/kg	11.5	0.910	14.1	0.914	12.6	0.933	12.8	0.925	10.8	0.923	13.5	0.914
pH	9045D	SU	5.95	--	5.76	--	6.26	--	6.16	--	5.43	--	5.43	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

October 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A1A**		**AA1**		**B2A**		**C4A**		**D3A**		**DD1**	
Sample Date			**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**	
Sample Time			**6:30**		**13:00**		**6:45**		**7:00**		**7:15**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16.5	5.91	8.65	6.11	14.2	5.76	19.3	6.10	11.5	6.05	14.4	5.67
Ammonia, Extractable	350.1	mg/kg	3.56	1.19	2.06	1.24	3.54	1.23	5.00	1.34	1.44	1.27	3.00	1.30
Aluminum	6010B	mg/kg	< 3.57	3.57	82.3	3.71	< 3.70	3.70	7.53	4.01	7.86	3.82	161	3.89
Chromium	6010B	mg/kg	31.1	2.58	26.5	2.65	25.1	2.79	23.6	3.04	21.2	2.92	20.0	2.88
Lead	6010B	mg/kg	12.3	0.858	12.4	0.883	12.0	0.929	19.3	1.01	14.2	0.974	15.5	0.962
pH	9045D	SU	6.61	--	5.11	--	6.20	--	5.85	--	6.03	--	5.15	--

Sample ID			**EE1**		**F2A**		**G1A**		**G1B**		**G4A**		**H3A**	
Sample Date			**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**	
Sample Time			**12:45**		**7:30**		**7:45**		**7:50**		**8:00**		**8:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	8.35	6.57	22.0	6.49	15.4	6.22	27.4	5.89	16.7	6.02	17.3	6.54
Ammonia, Extractable	350.1	mg/kg	< 1.27	1.27	1.51	1.37	11.7	1.23	2.30	1.24	2.74	1.26	2.39	1.26
Aluminum	6010B	mg/kg	252	3.80	11.0	4.10	9.30	3.69	9.25	3.72	4.33	3.78	8.50	3.79
Chromium	6010B	mg/kg	14.9	2.90	22.4	3.03	17.0	2.78	19.4	2.76	22.1	2.57	25.7	2.57
Lead	6010B	mg/kg	14.3	0.965	12.2	1.01	14.3	0.926	14.6	0.920	12.1	0.856	12.5	0.856
pH	9045D	SU	5.53	--	6.11	--	6.04	--	5.74	--	6.05	--	6.16	--

Sample ID			**HH1**		**K4A**		**L2A**		**M1A**		**M3A**		**N4A**	
Sample Date			**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**	
Sample Time			**12:30**		**8:30**		**8:45**		**9:00**		**9:15**		**9:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	5.93	5.70	17.2	6.26	15.1	6.78	6.43	5.79	16.0	6.72	14.5	5.76
Ammonia, Extractable	350.1	mg/kg	1.88	1.24	3.60	1.27	2.36	1.35	2.63	1.19	3.10	1.31	1.68	1.21
Aluminum	6010B	mg/kg	74.4	3.73	7.30	3.82	15.0	4.04	7.96	3.58	4.67	3.94	8.38	3.64
Chromium	6010B	mg/kg	14.3	2.79	18.8	2.87	16.2	2.82	16.1	2.42	27.0	2.94	18.7	2.70
Lead	6010B	mg/kg	9.31	0.929	9.54	0.958	16.1	0.941	11.4	0.808	16.0	0.980	13.1	0.900
pH	9045D	SU	5.38	--	6.11	--	5.44	--	6.86	--	6.08	--	6.44	--

October 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**O2A**		**Q3A**		**R4A**		**S1A**		**T2A**		**U3A**	
Sample Date			**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**	
Sample Time			**9:45**		**10:00**		**10:15**		**10:30**		**10:45**		**11:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.41	5.82	13.1	6.50	12.4	6.28	13.3	5.62	8.38	5.81	14.5	6.14
Ammonia, Extractable	350.1	mg/kg	2.08	1.25	1.56	1.31	2.42	1.23	4.03	1.28	1.93	1.24	1.71	1.22
Aluminum	6010B	mg/kg	3.80	3.74	8.56	3.94	8.53	3.70	6.45	3.83	6.76	3.72	6.62	3.66
Chromium	6010B	mg/kg	18.9	2.69	21.3	2.76	21.0	2.77	25.2	2.92	22.0	2.77	24.1	2.70
Lead	6010B	mg/kg	14.1	0.898	12.0	0.920	13.8	0.922	14.5	0.972	12.5	0.924	11.8	0.901
pH	9045D	SU	5.88	--	5.60	--	7.05	--	5.76	--	6.94	--	6.56	--

Sample ID			**U4A**		**U4B**		**W2A**		**Y1A**		**Y4A**		**Z3A**	
Sample Date			**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**		**10/28/10**	
Sample Time			**11:15**		**11:20**		**11:30**		**11:45**		**12:00**		**12:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	14.3	6.71	20.5	6.49	20.2	5.61	11.6	6.11	13.0	5.59	14.1	6.31
Ammonia, Extractable	350.1	mg/kg	3.07	1.31	3.04	1.31	7.19	1.30	2.85	1.31	3.12	1.26	1.64	1.28
Aluminum	6010B	mg/kg	8.61	3.94	5.14	3.94	7.82	3.90	8.16	3.92	9.33	3.77	6.88	3.84
Chromium	6010B	mg/kg	13.9	2.98	21.5	2.94	12.9	2.84	28.3	2.92	18.3	2.91	23.1	2.59
Lead	6010B	mg/kg	9.63	0.992	9.05	0.981	10.5	0.945	13.3	0.973	13.4	0.970	14.7	0.865
pH	9045D	SU	6.43	--	6.46	--	6.40	--	6.92	--	6.28	--	6.06	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

November 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			A2A		A4A		AA1		B3A		B4A		DD1	
Sample Date			11/30/10		11/30/10		11/30/10		11/30/10		11/30/10		11/30/10	
Sample Time			7:15		7:30		13:45		7:45		8:00		6:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	9.04	6.00	< 5.65	5.65	10.4	5.74	15.0	6.23	11.7	6.59	12.6	6.10
Ammonia, Extractable	350.1	mg/kg	4.13	1.20	1.58	1.19	1.83	1.23	8.57	1.25	2.83	1.27	2.41	1.28
Aluminum	6010B	mg/kg	7.67	3.60	5.92	3.58	8.09	3.70	6.56	3.76	8.42	3.82	113	3.84
Chromium	6010B	mg/kg	21.7	2.57	20.8	2.42	17.6	2.66	17.5	2.83	16.2	2.61	15.8	2.64
Lead	6010B	mg/kg	13.4	0.855	12.7	0.805	11.1	0.887	13.3	0.944	15.6	0.869	16.5	0.880
pH	9045D	SU	6.26	--	7.04	--	4.92	--	5.70	--	5.14	--	4.83	--

Sample ID			EE1		F1A		F4A		F4B		G3A		H2A	
Sample Date			11/30/10		11/30/10		11/30/10		11/30/10		11/30/10		11/30/10	
Sample Time			13:30		8:15		8:30		8:35		8:45		9:00	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.61	5.62	12.8	5.46	13.0	5.70	12.4	6.14	13.1	5.97	23.2	3.29
Ammonia, Extractable	350.1	mg/kg	< 1.21	1.21	1.51	1.22	1.92	1.28	4.10	1.26	2.10	1.23	3.84	1.28
Aluminum	6010B	mg/kg	395	3.64	11.7	3.65	8.70	2.84	8.51	3.79	5.78	3.69	6.48	3.85
Chromium	6010B	mg/kg	18.5	2.74	19.3	2.64	20.1	2.91	21.4	2.60	21.6	2.82	13.7	2.91
Lead	6010B	mg/kg	14.7	0.913	15.2	0.880	13.2	0.970	13.7	0.867	15.1	0.941	13.8	0.970
pH	9045D	SU	4.79	--	4.92	--	5.00	--	6.05	--	6.71	--	5.60	--

Sample ID			HH1		I4A		J2A		L1A		L3A		M4A	
Sample Date			11/30/10		11/30/10		11/30/10		11/30/10		11/30/10		11/30/10	
Sample Time			13:00		9:15		9:30		9:45		10:00		10:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.26	4.83	19.1	6.65	9.18	6.35	15.6	6.84	10.3	5.92	56.0	8.69
Ammonia, Extractable	350.1	mg/kg	1.95	1.23	5.34	1.34	2.37	1.28	1.32	1.24	3.07	1.25	2.32	1.83
Aluminum	6010B	mg/kg	86.1	3.69	7.62	4.02	6.76	3.84	7.08	3.71	9.23	3.74	25.0	5.50
Chromium	6010B	mg/kg	12.3	2.58	20.1	3.06	15.0	2.98	19.3	2.70	15.2	2.90	16.5	4.06
Lead	6010B	mg/kg	10.1	0.860	15.7	1.02	14.1	0.994	16.2	0.898	12.6	0.967	14.7	1.35
pH	9045D	SU	5.14	--	5.78	--	5.89	--	5.89	--	5.44	--	6.41	--

November 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**N2A**		**O1A**		**O3A**		**P4A**		**S2A**		**S4A**	
Sample Date			**11/30/10**		**11/30/10**		**11/30/10**		**11/30/10**		**11/30/10**		**11/30/10**	
Sample Time			**10:30**		**10:45**		**11:00**		**11:15**		**11:30**		**11:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.09	6.11	14.3	6.21	15.6	6.35	11.9	6.31	13.4	5.16	11.7	6.40
Ammonia, Extractable	350.1	mg/kg	1.88	1.27	2.54	1.23	2.82	1.22	3.57	1.22	2.00	1.20	2.41	1.24
Aluminum	6010B	mg/kg	12.5	3.81	< 3.70	3.70	< 3.67	3.67	< 3.66	3.66	3.75	3.59	< 3.73	3.73
Chromium	6010B	mg/kg	32.3	2.72	20.6	2.79	22.8	2.80	23.5	2.59	20.9	2.62	19.3	2.56
Lead	6010B	mg/kg	19.2	0.906	12.7	0.929	13.9	0.932	14.5	0.862	13.9	0.872	13.2	0.855
pH	9045D	SU	5.09	--	5.43	--	6.15	--	5.88	--	6.02	--	5.74	--

Sample ID			**T3A**		**T3B**		**U1A**		**X4A**		**Y3A**		**Z2A**	
Sample Date			**11/30/10**		**11/30/10**		**11/30/10**		**11/30/10**		**11/30/10**		**11/30/10**	
Sample Time			**12:00**		**12:05**		**12:15**		**12:30**		**12:45**		**13:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	12.7	5.08	14.9	5.37	13.5	5.73	7.26	4.66	18.6	5.82	19.3	5.58
Ammonia, Extractable	350.1	mg/kg	2.82	1.24	3.27	1.20	6.51	1.22	1.84	1.19	5.88	1.30	3.78	1.24
Aluminum	6010B	mg/kg	5.32	3.72	< 3.60	3.60	6.42	3.65	213	3.57	< 3.90	3.90	5.06	3.73
Chromium	6010B	mg/kg	25.7	2.54	20.8	2.72	26.5	2.46	11.1	2.53	28.6	2.89	24.3	2.82
Lead	6010B	mg/kg	10.7	0.848	10.4	0.907	13.3	0.821	7.76	0.843	16.6	0.962	16.2	0.940
pH	9045D	SU	5.89	--	6.07	--	5.34	--	4.79	--	5.64	--	5.53	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

December 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**A3A**		**AA1**		**B1A**		**D2A**		**DD1**		**E4A**	
Sample Date			**12/15/10**		**12/15/10**		**12/15/10**		**12/15/10**		**12/15/10**		**12/15/10**	
Sample Time			**7:30**		**14:00**		**7:45**		**8:00**		**14:15**		**8:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	16.6	5.57	< 6.56	6.56	13.7	5.82	13.0	6.24	8.02	6.73	9.89	6.34
Ammonia, Extractable	350.1	mg/kg	8.12	1.26	< 1.35	1.35	2.01	1.28	2.39	1.43	< 1.43	1.43	1.98	1.26
Aluminum	6010B	mg/kg	5.40	3.78	51.9	4.06	6.55	3.85	7.11	4.28	100	4.30	4.05	3.77
Chromium	6010B	mg/kg	17.6	2.54	16.7	2.92	12.4	2.76	18.4	3.13	14.0	3.25	9.23	2.90
Lead	6010B	mg/kg	11.3	0.846	12.8	0.973	11.7	0.920	14.4	1.04	22.7	1.08	7.56	0.966
pH	9045D	SU	7.50	--	6.15	--	6.13	--	5.44	--	6.07	--	5.70	--

Sample ID			**EE1**		**F3A**		**G2A**		**G2B**		**H1A**		**H4A**	
Sample Date			**12/15/10**		**12/15/10**		**12/15/10**		**12/15/10**		**12/15/10**		**12/15/10**	
Sample Time			**13:45**		**8:30**		**8:45**		**8:50**		**9:00**		**9:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.64	5.64	9.20	5.78	8.23	7.09	9.29	5.75	10.3	5.84	7.17	6.28
Ammonia, Extractable	350.1	mg/kg	< 1.31	1.31	13.7	1.30	< 1.43	1.43	2.01	1.23	< 1.31	1.31	< 1.24	1.24
Aluminum	6010B	mg/kg	348	3.94	7.53	3.89	6.53	4.30	5.33	3.69	4.67	3.97	8.87	3.72
Chromium	6010B	mg/kg	17.9	2.98	10.2	2.97	17.6	3.20	16.3	2.82	16.4	2.93	22.7	2.75
Lead	6010B	mg/kg	16.3	0.992	11.0	0.989	16.5	1.07	13.3	0.941	15.6	0.977	10.1	0.918
pH	9045D	SU	5.97	--	5.29	--	5.79	--	5.95	--	5.85	--	5.36	--

Sample ID			**HH1**		**J3A**		**L4A**		**M2A**		**N1A**		**N3A**	
Sample Date			**12/15/10**		**12/15/10**		**12/15/10**		**12/15/10**		**12/15/10**		**12/15/10**	
Sample Time			**13:30**		**9:30**		**9:45**		**10:00**		**10:15**		**10:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	7.45	6.43	< 6.09	6.09	< 6.10	6.10	12.0	5.94	< 5.92	5.92	< 6.28	6.28
Ammonia, Extractable	350.1	mg/kg	< 1.24	1.24	< 1.26	1.26	< 1.27	1.27	1.80	1.27	< 1.24	1.24	< 1.24	1.24
Aluminum	6010B	mg/kg	64.2	3.71	5.74	3.78	8.48	3.82	6.48	3.82	4.89	3.73	4.52	3.72
Chromium	6010B	mg/kg	10.9	2.57	14.6	2.89	11.1	2.92	15.8	2.76	20.7	2.75	14.1	2.65
Lead	6010B	mg/kg	8.25	0.857	13.0	0.963	8.83	0.974	14.7	0.921	22.7	0.916	11.0	0.882
pH	9045D	SU	6.35	--	7.47	--	6.36	--	6.16	--	6.16	--	7.53	--

December 2010
Soil Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			O4A		Q2A		S3A		T1A		T4A		U2A	
Sample Date			12/15/10		12/15/10		12/15/10		12/15/10		12/15/10		12/15/10	
Sample Time			10:45		11:00		11:15		11:30		11:45		12:00	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	< 5.71	5.71	8.41	6.49	17.9	6.11	< 5.81	5.81	10.1	6.43	< 6.17	6.17
Ammonia, Extractable	350.1	mg/kg	< 1.29	1.29	< 1.26	1.26	< 1.24	1.24	< 1.32	1.32	1.39	1.28	< 1.32	1.32
Aluminum	6010B	mg/kg	5.34	3.88	4.90	3.77	4.17	3.72	5.92	3.97	5.32	3.85	4.80	3.96
Chromium	6010B	mg/kg	15.6	2.95	18.4	2.64	19.1	2.58	20.5	2.83	15.8	2.94	21.9	3.02
Lead	6010B	mg/kg	15.2	0.982	13.6	0.880	13.4	0.859	14.7	0.945	14.9	0.981	13.3	1.01
pH	9045D	SU	6.35	--	6.20	--	6.96	--	6.84	--	5.94	--	5.78	--

Sample ID			V4A		V4B		W3A		Y2A		Z1A		Z4A	
Sample Date			12/15/10		12/15/10		12/15/10		12/15/10		12/15/10		12/15/10	
Sample Time			12:15		12:20		12:30		12:45		13:00		13:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/kg	13.5	7.14	< 5.93	5.93	7.57	6.46	16.8	6.72	9.80	6.74	13.0	6.31
Ammonia, Extractable	350.1	mg/kg	< 1.43	1.43	1.37	1.27	< 1.35	1.35	5.02	1.33	2.54	1.37	< 1.47	1.47
Aluminum	6010B	mg/kg	< 4.30	4.30	5.26	3.82	< 4.05	4.05	< 3.98	3.98	6.56	4.12	5.50	4.42
Chromium	6010B	mg/kg	14.9	3.05	17.5	2.89	17.5	2.84	17.4	3.00	26.4	2.92	18.3	3.32
Lead	6010B	mg/kg	14.1	1.02	13.3	0.963	14.1	0.947	16.6	1.00	12.8	0.975	14.6	1.11
pH	9045D	SU	5.65	--	5.55	--	6.44	--	5.79	--	5.28	--	5.73	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

2006
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID Sample Date Sample Time			AA1 08/29/06 12:45		B4A 08/29/06 7:15		DD1 08/29/06 13:00	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
1,2-Dichlorobenzene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
1,3-Dichlorobenzene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
1,4-Dichlorobenzene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
2,4,5-Trichlorophenol	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
2,4,6-Trichlorophenol	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
2,4-Dichlorophenol	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
2,4-Dimethylphenol	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
2,4-Dinitrophenol	8270C	ug/kg	< 9570	9570	< 10500	10500	< 10500	10500
2,4-Dinitrotoluene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
2,6-Dinitrotoluene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
2-Chloronaphthalene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
2-Chlorophenol	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
2-Methylnaphthalene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
2-Methylphenol	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
2-Nitroaniline	8270C	ug/kg	< 9570	9570	< 10500	10500	< 10500	10500
2-Nitrophenol	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
3,3'-Dichlorobenzidine	8270C	ug/kg	< 3830	3830	< 4200	4200	< 4210	4210
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
3+4-Methylphenols	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
3-Nitroaniline	8270C	ug/kg	< 9570	9570	< 10500	10500	< 10500	10500
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 9570	9570	< 10500	10500	< 10500	10500
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
4-Chloro-3-Methylphenol	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
4-Nitrophenol	8270C	ug/kg	< 9570	9570	< 10500	10500	< 10500	10500
Acenaphthene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Acenaphthylene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Anthracene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Benzo (a) Anthracene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Benzo (a) Pyrene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Benzo (b) Fluoranthene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Benzo (g,h,i) Perylene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Benzo (k) Fluoranthene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Benzoic Acid	8270C	ug/kg	< 9570	9570	< 10500	10500	< 10500	10500
Benzyl Alcohol	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Benzyl Butyl Phthalate	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Chrysene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Dibenzofuran	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Diethyl Phthalate	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Dimethyl Phthalate	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Di-n-Butylphthalate	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Di-n-Octyl Phthalate	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Fluoranthene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Fluorene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Hexachlorobenzene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Hexachlorobutadiene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Hexachlorocyclopentadiene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Hexachloroethane	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Naphthalene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Nitrobenzene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
N-Nitrosodiphenylamine	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
P-Chloroaniline	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Pentachlorophenol	8270C	ug/kg	< 9570	9570	< 10500	10500	< 10500	10500
Phenanthrene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
Phenol	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100
P-Nitroaniline	8270C	ug/kg	< 9570	9570	< 10500	10500	< 10500	10500
Pyrene	8270C	ug/kg	< 1910	1910	< 2100	2100	< 2100	2100

2006
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			AA1		B4A		DD1	
Sample Date			08/29/06		08/29/06		08/29/06	
Sample Time			12:45		7:15		13:00	
Metals			Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	67.6	3.5	< 3.82	3.82	147	3.83
Arsenic	6010B	mg/kg	6.53	0.846	6.19	0.942	7.75	0.926
Barium	6010B	mg/kg	71.1	0.423	101	0.471	51.4	0.463
Beryllium	6010B	mg/kg	< 0.423	0.423	< 0.471	0.471	< 0.463	0.463
Cadmium	6010B	mg/kg	< 0.423	0.423	< 0.471	0.471	< 0.463	0.463
Calcium	6010B	mg/kg	822	8.46	2730	9.42	607	9.26
Chromium	6010B	mg/kg	17.1	2.54	37.9	2.83	16.6	2.78
Cobalt	6010B	mg/kg	2.21	0.846	1.92	0.942	2.19	0.926
Copper	6010B	mg/kg	7.8	0.846	5.9	0.942	12.8	0.926
Iron	6010B	mg/kg	17500	1.69	30600	1.88	23900	1.85
Lead	6010B	mg/kg	12.4	0.846	17.8	0.942	22.7	0.926
Magnesium	6010B	mg/kg	700	21.2	709	23.6	327	23.1
Manganese	6010B	mg/kg	126	0.423	258	0.471	196	0.463
Mercury	7471A	mg/kg	< 0.289	0.289	< 0.318	0.318	< 0.303	0.303
Nickel	6010B	mg/kg	6.02	1.69	4.91	1.88	4.63	1.85
Potassium	6010B	mg/kg	588	42.3	1050	47.1	474	46.3
Selenium	7740	mg/kg	< 1.74 S	1.74	< 1.88 S	1.88	< 1.81 S	1.81
Silver	6010B	mg/kg	< 1.69	1.69	< 1.88	1.88	< 1.85	1.85
Sodium	6010B	mg/kg	36	21.2	39.1	23.6	25.3	23.1
Thallium	6010B	mg/kg	< 21.2	21.2	< 23.6	23.6	< 23.1	23.1
Tin	6010B	mg/kg	< 21.2	21.2	< 23.6	23.6	< 23.1	23.1
Vanadium	6010B	mg/kg	31.1	0.423	39.6	0.471	27.7	0.463
Zinc	6010B	mg/kg	23.7	0.846	21.3	0.942	17.5	0.926
Misc Analyses								
Ammonia	350.1	mg/kg	15	5.76	43.3	6.14	28.5	6.17
Ammonia, Extractable	350.1	mg/kg	5.87	1.17	12.3	1.27	9.39	1.28
pH	9045C	SU	5.08	--	6.7	--	4.94	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit
S = analyzed by method of standard addition

2006
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID Sample Date Sample Time			EE1 08/29/06 12:30		F1A 08/29/06 7:30		H2A 08/29/06 8:15	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
1,2-Dichlorobenzene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
1,3-Dichlorobenzene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
1,4-Dichlorobenzene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
2,4,5-Trichlorophenol	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
2,4,6-Trichlorophenol	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
2,4-Dichlorophenol	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
2,4-Dimethylphenol	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
2,4-Dinitrophenol	8270C	ug/kg	< 945	945	< 9050	9050	< 9390	9390
2,4-Dinitrotoluene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
2,6-Dinitrotoluene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
2-Chloronaphthalene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
2-Chlorophenol	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
2-Methylnaphthalene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
2-Methylphenol	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
2-Nitroaniline	8270C	ug/kg	< 945	945	< 9050	9050	< 9390	9390
2-Nitrophenol	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
3,3'-Dichlorobenzidine	8270C	ug/kg	< 378	378	< 3620	3620	< 3760	3760
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
3+4-Methylphenols	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
3-Nitroaniline	8270C	ug/kg	< 945	945	< 9050	9050	< 9390	9390
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 945	945	< 9050	9050	< 9390	9390
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
4-Chloro-3-Methylphenol	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
4-Nitrophenol	8270C	ug/kg	< 945	945	< 9050	9050	< 9390	9390
Acenaphthene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Acenaphthylene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Anthracene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Benzo (a) Anthracene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Benzo (a) Pyrene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Benzo (b) Fluoranthene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Benzo (g,h,i) Perylene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Benzo (k) Fluoranthene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Benzoic Acid	8270C	ug/kg	< 945	945	< 9050	9050	< 9390	9390
Benzyl Alcohol	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Benzyl Butyl Phthalate	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Chrysene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Dibenzofuran	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Diethyl Phthalate	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Dimethyl Phthalate	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Di-n-Butylphthalate	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Di-n-Octyl Phthalate	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Fluoranthene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Fluorene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Hexachlorobenzene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Hexachlorobutadiene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Hexachlorocyclopentadiene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Hexachloroethane	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Naphthalene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Nitrobenzene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
N-Nitrosodiphenylamine	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
P-Chloroaniline	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Pentachlorophenol	8270C	ug/kg	< 945	945	< 9050	9050	< 9390	9390
Phenanthrene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
Phenol	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880
P-Nitroaniline	8270C	ug/kg	< 945	945	< 9050	9050	< 9390	9390
Pyrene	8270C	ug/kg	< 189	189	< 1810	1810	< 1880	1880

2006
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			EE1		F1A		H2A	
Sample Date			08/29/06		08/29/06		08/29/06	
Sample Time			12:30		7:30		8:15	
Metals			Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	359	3.44	< 3.34	3.34	< 3.41	3.41
Arsenic	6010B	mg/kg	6.56	0.84	5.61	0.795	4.82	0.789
Barium	6010B	mg/kg	61.1	0.42	68.4	0.397	68.9	0.395
Beryllium	6010B	mg/kg	0.625	0.42	< 0.397	0.397	0.46	0.395
Cadmium	6010B	mg/kg	< 0.42	0.42	< 0.397	0.397	< 0.395	0.395
Calcium	6010B	mg/kg	574	8.4	2000	7.95	1880	7.89
Chromium	6010B	mg/kg	19.7	2.52	18.9	2.38	11.6	2.37
Cobalt	6010B	mg/kg	5.92	0.84	2.47	0.795	43.3	0.789
Copper	6010B	mg/kg	20.5	0.84	5.74	0.795	17.1	0.789
Iron	6010B	mg/kg	37100	1.68	29700	7.95	22800	1.58
Lead	6010B	mg/kg	12.4	0.84	15.1	0.795	14.3	0.789
Magnesium	6010B	mg/kg	1180	21	585	19.9	630	19.7
Manganese	6010B	mg/kg	144	0.42	223	0.397	1170	3.95
Mercury	7471A	mg/kg	< 0.279	0.279	< 0.275	0.275	< 0.276	0.276
Nickel	6010B	mg/kg	8.57	1.68	3.7	1.59	27.4	1.58
Potassium	6010B	mg/kg	1340	42	594	39.7	782	39.5
Selenium	7740	mg/kg	< 1.67 S	1.67	< 1.61 S	1.61	< 1.62 S	1.62
Silver	6010B	mg/kg	< 1.68	1.68	< 1.59	1.59	< 1.58	1.58
Sodium	6010B	mg/kg	31.1	21	24.3	19.9	24	19.7
Thallium	6010B	mg/kg	< 21	21	< 19.9	19.9	< 19.7	19.7
Tin	6010B	mg/kg	< 21	21	< 19.9	19.9	< 19.7	19.7
Vanadium	6010B	mg/kg	43.2	0.42	27	0.397	22.8	0.395
Zinc	6010B	mg/kg	31.8	0.84	17.8	0.795	32.7	0.789
Misc Analyses								
Ammonia	350.1	mg/kg	< 5.61	5.61	29.5	5.46	20.9	5.66
Ammonia, Extractable	350.1	mg/kg	< 1.15	1.15	11.8	1.11	2.06	1.14
pH	9045C	SU	5	--	5.95	--	6.51	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit
S = analyzed by method of standard addition

2006
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**HH1**		**L3A**		**N2A**	
Sample Date			**08/29/06**		**08/29/06**		**08/29/06**	
Sample Time			**12:15**		**9:15**		**9:30**	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
1,2-Dichlorobenzene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
1,3-Dichlorobenzene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
1,4-Dichlorobenzene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
2,4,5-Trichlorophenol	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
2,4,6-Trichlorophenol	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
2,4-Dichlorophenol	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
2,4-Dimethylphenol	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
2,4-Dinitrophenol	8270C	ug/kg	< 9390	9390	< 9360	9360	< 9510	9510
2,4-Dinitrotoluene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
2,6-Dinitrotoluene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
2-Chloronaphthalene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
2-Chlorophenol	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
2-Methylnaphthalene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
2-Methylphenol	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
2-Nitroaniline	8270C	ug/kg	< 9390	9390	< 9360	9360	< 9510	9510
2-Nitrophenol	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
3,3'-Dichlorobenzidine	8270C	ug/kg	< 3760	3760	< 3740	3740	< 3800	3800
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
3+4-Methylphenols	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
3-Nitroaniline	8270C	ug/kg	< 9390	9390	< 9360	9360	< 9510	9510
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 9390	9390	< 9360	9360	< 9510	9510
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
4-Chloro-3-Methylphenol	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
4-Nitrophenol	8270C	ug/kg	< 9390	9390	< 9360	9360	< 9510	9510
Acenaphthene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Acenaphthylene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Anthracene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Benzo (a) Anthracene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Benzo (a) Pyrene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Benzo (b) Fluoranthene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Benzo (g,h,i) Perylene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Benzo (k) Fluoranthene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Benzoic Acid	8270C	ug/kg	< 9390	9390	< 9360	9360	< 9510	9510
Benzyl Alcohol	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Benzyl Butyl Phthalate	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Chrysene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Dibenzofuran	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Diethyl Phthalate	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Dimethyl Phthalate	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Di-n-Butylphthalate	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Di-n-Octyl Phthalate	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Fluoranthene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Fluorene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Hexachlorobenzene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Hexachlorobutadiene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Hexachlorocyclopentadiene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Hexachloroethane	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Naphthalene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Nitrobenzene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
N-Nitrosodiphenylamine	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
P-Chloroaniline	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Pentachlorophenol	8270C	ug/kg	< 9390	9390	< 9360	9360	< 9510	9510
Phenanthrene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
Phenol	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900
P-Nitroaniline	8270C	ug/kg	< 9390	9390	< 9360	9360	< 9510	9510
Pyrene	8270C	ug/kg	< 1880	1880	< 1870	1870	< 1900	1900

2006
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**HH1**		**L3A**		**N2A**	
Sample Date			**08/29/06**		**08/29/06**		**08/29/06**	
Sample Time			**12:15**		**9:15**		**9:30**	
Metals			Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	101	3.42	< 3.46	3.46	< 3.48	3.48
Arsenic	6010B	mg/kg	3.41	0.803	4.3	0.798	7.47	0.833
Barium	6010B	mg/kg	31.9	0.401	62.1	0.399	46.8	0.417
Beryllium	6010B	mg/kg	< 0.401	0.401	0.474	0.399	0.608	0.417
Cadmium	6010B	mg/kg	< 0.401	0.401	< 0.399	0.399	< 0.417	0.417
Calcium	6010B	mg/kg	469	8.03	2050	7.98	1910	8.33
Chromium	6010B	mg/kg	11.7	2.41	9.88	2.39	24.5	2.5
Cobalt	6010B	mg/kg	3.22	0.803	5.04	0.798	4.27	0.833
Copper	6010B	mg/kg	5.63	0.803	10.4	0.798	22.4	0.833
Iron	6010B	mg/kg	13000	1.61	18000	1.6	47400	16.7
Lead	6010B	mg/kg	9.06	0.803	9.98	0.798	10.9	0.833
Magnesium	6010B	mg/kg	285	20.1	674	19.9	977	20.8
Manganese	6010B	mg/kg	221	0.401	79.1	0.399	77.6	0.417
Mercury	7471A	mg/kg	< 0.273	0.273	< 0.285	0.285	< 0.279	0.279
Nickel	6010B	mg/kg	2.96	1.61	4.06	1.6	4.92	1.67
Potassium	6010B	mg/kg	459	40.1	905	39.9	619	41.7
Selenium	7740	mg/kg	< 1.58 S	1.58	< 1.78 S	1.78	< 1.78 S	1.78
Silver	6010B	mg/kg	< 1.61	1.61	< 1.6	1.6	< 1.67	1.67
Sodium	6010B	mg/kg	21.9	20.1	31.4	19.9	32.4	20.8
Thallium	6010B	mg/kg	< 20.1	20.1	< 19.9	19.9	< 20.8	20.8
Tin	6010B	mg/kg	< 20.1	20.1	< 19.9	19.9	< 20.8	20.8
Vanadium	6010B	mg/kg	17.2	0.401	17.8	0.399	42.2	0.417
Zinc	6010B	mg/kg	12.9	0.803	15.2	0.798	20.1	0.833
Misc Analyses								
Ammonia	350.1	mg/kg	16.3	5.68	16.8	5.64	16.4	5.63
Ammonia, Extractable	350.1	mg/kg	6.2	1.14	1.18	1.15	< 1.16	1.16
pH	9045C	SU	5.17	--	6.69	--	6.39	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit
S = analyzed by method of standard addition

2006
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			P4A		S4A		U1A	
Sample Date			08/29/06		08/29/06		08/29/06	
Sample Time			10:15		10:45		11:15	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
1,2-Dichlorobenzene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
1,3-Dichlorobenzene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
1,4-Dichlorobenzene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
2,4,5-Trichlorophenol	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
2,4,6-Trichlorophenol	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
2,4-Dichlorophenol	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
2,4-Dimethylphenol	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
2,4-Dinitrophenol	8270C	ug/kg	< 9250	9250	< 9240	9240	< 9420	9420
2,4-Dinitrotoluene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
2,6-Dinitrotoluene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
2-Chloronaphthalene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
2-Chlorophenol	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
2-Methylnaphthalene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
2-Methylphenol	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
2-Nitroaniline	8270C	ug/kg	< 9250	9250	< 9240	9240	< 9420	9420
2-Nitrophenol	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
3,3'-Dichlorobenzidine	8270C	ug/kg	< 3700	3700	< 3700	3700	< 3770	3770
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
3+4-Methylphenols	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
3-Nitroaniline	8270C	ug/kg	< 9250	9250	< 9240	9240	< 9420	9420
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 9250	9250	< 9240	9240	< 9420	9420
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
4-Chloro-3-Methylphenol	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
4-Nitrophenol	8270C	ug/kg	< 9250	9250	< 9240	9240	< 9420	9420
Acenaphthene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Acenaphthylene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Anthracene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Benzo (a) Anthracene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Benzo (a) Pyrene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Benzo (b) Fluoranthene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Benzo (g,h,i) Perylene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Benzo (k) Fluoranthene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Benzoic Acid	8270C	ug/kg	< 9250	9250	< 9240	9240	< 9420	9420
Benzyl Alcohol	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Benzyl Butyl Phthalate	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Chrysene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Dibenzofuran	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Diethyl Phthalate	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Dimethyl Phthalate	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Di-n-Butylphthalate	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Di-n-Octyl Phthalate	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Fluoranthene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Fluorene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Hexachlorobenzene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Hexachlorobutadiene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Hexachlorocyclopentadiene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Hexachloroethane	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Naphthalene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Nitrobenzene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
N-Nitrosodiphenylamine	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
P-Chloroaniline	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Pentachlorophenol	8270C	ug/kg	< 9250	9250	< 9240	9240	< 9420	9420
Phenanthrene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
Phenol	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880
P-Nitroaniline	8270C	ug/kg	< 9250	9250	< 9240	9240	< 9420	9420
Pyrene	8270C	ug/kg	< 1850	1850	< 1850	1850	< 1880	1880

2006
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			P4A		S4A		U1A	
Sample Date			08/29/06		08/29/06		08/29/06	
Sample Time			10:15		10:45		11:15	
Metals			Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	< 3.37	3.37	< 3.36	3.36	< 3.48	3.48
Arsenic	6010B	mg/kg	7.3	0.801	5.57	0.855	5.56	0.8
Barium	6010B	mg/kg	50.7	0.401	57.2	0.428	43.1	0.4
Beryllium	6010B	mg/kg	0.405	0.401	< 0.428	0.428	0.513	0.4
Cadmium	6010B	mg/kg	< 0.401	0.401	< 0.428	0.428	< 0.4	0.4
Calcium	6010B	mg/kg	1740	8.01	1680	8.55	971	8
Chromium	6010B	mg/kg	22.8	2.4	18.3	2.57	27.3	2.4
Cobalt	6010B	mg/kg	1.82	0.801	1.62	0.855	4.45	0.8
Copper	6010B	mg/kg	8.9	0.801	5.28	0.855	20.8	0.8
Iron	6010B	mg/kg	27300	1.6	18900	1.71	51400	16
Lead	6010B	mg/kg	10.8	0.801	10.4	0.855	9.71	0.8
Magnesium	6010B	mg/kg	709	20	539	21.4	716	20
Manganese	6010B	mg/kg	96.2	0.401	104	0.428	108	0.4
Mercury	7471A	mg/kg	< 0.26	0.26	< 0.259	0.259	< 0.288	0.288
Nickel	6010B	mg/kg	4.25	1.6	3.77	1.71	6.72	1.6
Potassium	6010B	mg/kg	567	40.1	499	42.8	876	40
Selenium	7740	mg/kg	< 1.63 S	1.63	< 1.68 S	1.68	< 1.73 S	1.73
Silver	6010B	mg/kg	< 1.6	1.6	< 1.71	1.71	< 1.6	1.6
Sodium	6010B	mg/kg	< 20	20	26.2	21.4	31	20
Thallium	6010B	mg/kg	< 20	20	< 21.4	21.4	< 20	20
Tin	6010B	mg/kg	< 20	20	< 21.4	21.4	< 20	20
Vanadium	6010B	mg/kg	32.9	0.401	26.6	0.428	41.7	0.4
Zinc	6010B	mg/kg	17.4	0.801	15.5	0.855	23.8	0.8
Misc Analyses								
Ammonia	350.1	mg/kg	16.5	5.57	25.8	5.58	28.7	5.74
Ammonia, Extractable	350.1	mg/kg	1.26	1.12	20.7	1.12	4.22	1.16
pH	9045C	SU	6.56	--	6.19	--	6.04	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit
S = analyzed by method of standard addition

2006
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**X4A**		**Z2A**	
Sample Date			**08/29/06**		**08/29/06**	
Sample Time			**11:30**		**12:00**	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 1840	1840	< 1860	1860
1,2-Dichlorobenzene	8270C	ug/kg	< 1840	1840	< 1860	1860
1,3-Dichlorobenzene	8270C	ug/kg	< 1840	1840	< 1860	1860
1,4-Dichlorobenzene	8270C	ug/kg	< 1840	1840	< 1860	1860
2,4,5-Trichlorophenol	8270C	ug/kg	< 1840	1840	< 1860	1860
2,4,6-Trichlorophenol	8270C	ug/kg	< 1840	1840	< 1860	1860
2,4-Dichlorophenol	8270C	ug/kg	< 1840	1840	< 1860	1860
2,4-Dimethylphenol	8270C	ug/kg	< 1840	1840	< 1860	1860
2,4-Dinitrophenol	8270C	ug/kg	< 9210	9210	< 9320	9320
2,4-Dinitrotoluene	8270C	ug/kg	< 1840	1840	< 1860	1860
2,6-Dinitrotoluene	8270C	ug/kg	< 1840	1840	< 1860	1860
2-Chloronaphthalene	8270C	ug/kg	< 1840	1840	< 1860	1860
2-Chlorophenol	8270C	ug/kg	< 1840	1840	< 1860	1860
2-Methylnaphthalene	8270C	ug/kg	< 1840	1840	< 1860	1860
2-Methylphenol	8270C	ug/kg	< 1840	1840	< 1860	1860
2-Nitroaniline	8270C	ug/kg	< 9210	9210	< 9320	9320
2-Nitrophenol	8270C	ug/kg	< 1840	1840	< 1860	1860
3,3'-Dichlorobenzidine	8270C	ug/kg	< 3680	3680	< 3730	3730
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 1840	1840	< 1860	1860
3+4-Methylphenols	8270C	ug/kg	< 1840	1840	< 1860	1860
3-Nitroaniline	8270C	ug/kg	< 9210	9210	< 9320	9320
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 9210	9210	< 9320	9320
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 1840	1840	< 1860	1860
4-Chloro-3-Methylphenol	8270C	ug/kg	< 1840	1840	< 1860	1860
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 1840	1840	< 1860	1860
4-Nitrophenol	8270C	ug/kg	< 9210	9210	< 9320	9320
Acenaphthene	8270C	ug/kg	< 1840	1840	< 1860	1860
Acenaphthylene	8270C	ug/kg	< 1840	1840	< 1860	1860
Anthracene	8270C	ug/kg	< 1840	1840	< 1860	1860
Benzo (a) Anthracene	8270C	ug/kg	< 1840	1840	< 1860	1860
Benzo (a) Pyrene	8270C	ug/kg	< 1840	1840	< 1860	1860
Benzo (b) Fluoranthene	8270C	ug/kg	< 1840	1840	< 1860	1860
Benzo (g,h,i) Perylene	8270C	ug/kg	< 1840	1840	< 1860	1860
Benzo (k) Fluoranthene	8270C	ug/kg	< 1840	1840	< 1860	1860
Benzoic Acid	8270C	ug/kg	< 9210	9210	< 9320	9320
Benzyl Alcohol	8270C	ug/kg	< 1840	1840	< 1860	1860
Benzyl Butyl Phthalate	8270C	ug/kg	< 1840	1840	< 1860	1860
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 1840	1840	< 1860	1860
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 1840	1840	< 1860	1860
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 1840	1840	< 1860	1860
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 1840	1840	< 1860	1860
Chrysene	8270C	ug/kg	< 1840	1840	< 1860	1860
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 1840	1840	< 1860	1860
Dibenzofuran	8270C	ug/kg	< 1840	1840	< 1860	1860
Diethyl Phthalate	8270C	ug/kg	< 1840	1840	< 1860	1860
Dimethyl Phthalate	8270C	ug/kg	< 1840	1840	< 1860	1860
Di-n-Butylphthalate	8270C	ug/kg	< 1840	1840	< 1860	1860
Di-n-Octyl Phthalate	8270C	ug/kg	< 1840	1840	< 1860	1860
Fluoranthene	8270C	ug/kg	< 1840	1840	< 1860	1860
Fluorene	8270C	ug/kg	< 1840	1840	< 1860	1860
Hexachlorobenzene	8270C	ug/kg	< 1840	1840	< 1860	1860
Hexachlorobutadiene	8270C	ug/kg	< 1840	1840	< 1860	1860
Hexachlorocyclopentadiene	8270C	ug/kg	< 1840	1840	< 1860	1860
Hexachloroethane	8270C	ug/kg	< 1840	1840	< 1860	1860
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 1840	1840	< 1860	1860
Naphthalene	8270C	ug/kg	< 1840	1840	< 1860	1860
Nitrobenzene	8270C	ug/kg	< 1840	1840	< 1860	1860
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 1840	1840	< 1860	1860
N-Nitrosodiphenylamine	8270C	ug/kg	< 1840	1840	< 1860	1860
P-Chloroaniline	8270C	ug/kg	< 1840	1840	< 1860	1860
Pentachlorophenol	8270C	ug/kg	< 9210	9210	< 9320	9320
Phenanthrene	8270C	ug/kg	< 1840	1840	< 1860	1860
Phenol	8270C	ug/kg	< 1840	1840	< 1860	1860
P-Nitroaniline	8270C	ug/kg	< 9210	9210	< 9320	9320
Pyrene	8270C	ug/kg	< 1840	1840	< 1860	1860

2006
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			X4A		Z2A	
Sample Date			08/29/06		08/29/06	
Sample Time			11:30		12:00	
Metals			Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	4.58	3.37	< 3.41	3.41
Arsenic	6010B	mg/kg	2.73	0.784	6.82	0.83
Barium	6010B	mg/kg	44.4	0.392	63.8	0.415
Beryllium	6010B	mg/kg	< 0.392	0.392	< 0.415	0.415
Cadmium	6010B	mg/kg	< 0.392	0.392	< 0.415	0.415
Calcium	6010B	mg/kg	289	7.84	1700	8.3
Chromium	6010B	mg/kg	16.7	2.35	35.2	2.49
Cobalt	6010B	mg/kg	2.34	0.784	1.97	0.83
Copper	6010B	mg/kg	14.6	0.784	7.01	0.83
Iron	6010B	mg/kg	21800	1.57	31700	1.66
Lead	6010B	mg/kg	6.8	0.784	13.6	0.83
Magnesium	6010B	mg/kg	581	19.6	569	20.8
Manganese	6010B	mg/kg	134	0.392	146	0.415
Mercury	7471A	mg/kg	< 0.282	0.282	< 0.284	0.284
Nickel	6010B	mg/kg	4.51	1.57	5.5	1.66
Potassium	6010B	mg/kg	945	39.2	616	41.5
Selenium	7740	mg/kg	< 1.74 S	1.74	< 1.58 S	1.58
Silver	6010B	mg/kg	< 1.57	1.57	< 1.66	1.66
Sodium	6010B	mg/kg	< 19.6	19.6	35.5	20.8
Thallium	6010B	mg/kg	< 19.6	19.6	< 20.8	20.8
Tin	6010B	mg/kg	< 19.6	19.6	< 20.8	20.8
Vanadium	6010B	mg/kg	30	0.392	38.6	0.415
Zinc	6010B	mg/kg	18.8	0.784	20.3	0.83
Misc Analyses						
Ammonia	350.1	mg/kg	14.8	5.57	42.9	5.62
Ammonia, Extractable	350.1	mg/kg	7.82	1.12	8.95	1.14
pH	9045C	SU	5.17	--	5.88	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit
S = analyzed by method of standard addition

2007
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID Sample Date Sample Time			AA1 08/29/07 13:00		B4A 08/29/07 7:15		DD1 08/29/07 13:15	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
1,2-Dichlorobenzene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
1,3-Dichlorobenzene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
1,4-Dichlorobenzene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
2,4,5-Trichlorophenol	8270C	ug/kg	< 197	197	< 207	207	< 205	205
2,4,6-Trichlorophenol	8270C	ug/kg	< 197	197	< 207	207	< 205	205
2,4-Dichlorophenol	8270C	ug/kg	< 197	197	< 207	207	< 205	205
2,4-Dimethylphenol	8270C	ug/kg	< 197	197	< 207	207	< 205	205
2,4-Dinitrophenol	8270C	ug/kg	< 987	987	< 1040	1040	< 1030	1030
2,4-Dinitrotoluene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
2,6-Dinitrotoluene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
2-Chloronaphthalene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
2-Chlorophenol	8270C	ug/kg	< 197	197	< 207	207	< 205	205
2-Methylnaphthalene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
2-Methylphenol	8270C	ug/kg	< 197	197	< 207	207	< 205	205
2-Nitroaniline	8270C	ug/kg	< 987	987	< 1040	1040	< 1030	1030
2-Nitrophenol	8270C	ug/kg	< 197	197	< 207	207	< 205	205
3,3'-Dichlorobenzidine	8270C	ug/kg	< 395	395	< 415	415	< 411	411
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 197	197	< 207	207	< 205	205
3+4-Methylphenols	8270C	ug/kg	< 197	197	< 207	207	< 205	205
3-Nitroaniline	8270C	ug/kg	< 987	987	< 1040	1040	< 1030	1030
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 987	987	< 1040	1040	< 1030	1030
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 197	197	< 207	207	< 205	205
4-Chloro-3-Methylphenol	8270C	ug/kg	< 197	197	< 207	207	< 205	205
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 197	197	< 207	207	< 205	205
4-Nitrophenol	8270C	ug/kg	< 987	987	< 1040	1040	< 1030	1030
Acenaphthene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Acenaphthylene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Anthracene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Benzo (a) Anthracene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Benzo (a) Pyrene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Benzo (b) Fluoranthene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Benzo (g,h,i) Perylene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Benzo (k) Fluoranthene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Benzoic Acid	8270C	ug/kg	< 987	987	< 1040	1040	< 1030	1030
Benzyl Alcohol	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Benzyl Butyl Phthalate	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Chrysene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Dibenzofuran	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Diethyl Phthalate	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Dimethyl Phthalate	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Di-n-Butylphthalate	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Di-n-Octyl Phthalate	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Fluoranthene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Fluorene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Hexachlorobenzene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Hexachlorobutadiene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Hexachlorocyclopentadiene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Hexachloroethane	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Naphthalene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Nitrobenzene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 197	197	< 207	207	< 205	205
N-Nitrosodiphenylamine	8270C	ug/kg	< 197	197	< 207	207	< 205	205
P-Chloroaniline	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Pentachlorophenol	8270C	ug/kg	< 987	987	< 1040	1040	< 1030	1030
Phenanthrene	8270C	ug/kg	< 197	197	< 207	207	< 205	205
Phenol	8270C	ug/kg	< 197	197	< 207	207	< 205	205
P-Nitroaniline	8270C	ug/kg	< 987	987	< 1040	1040	< 1030	1030
Pyrene	8270C	ug/kg	< 197	197	< 207	207	< 205	205

2007
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**AA1**		**B4A**		**DD1**	
Sample Date			**08/29/07**		**08/29/07**		**08/29/07**	
Sample Time			**13:00**		**7:15**		**13:15**	
Metals			Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Arsenic	7060A	mg/kg	3.5	0.356	4.21	0.921	5.29	0.876
Aluminum	6010B	mg/kg	73.7	3.73	< 3.89	3.89	81.5	3.81
Barium	6010B	mg/kg	64.3	0.461	92.2	0.499	50.8	0.457
Beryllium	6010B	mg/kg	< 0.461	0.461	< 0.499	0.499	< 0.457	0.457
Cadmium	6010B	mg/kg	< 0.461	0.461	< 0.499	0.499	< 0.457	0.457
Calcium	6010B	mg/kg	549	9.22	2120	9.99	518	9.14
Chromium	6010B	mg/kg	21.6	2.77	26.2	3	15.8	2.74
Cobalt	6010B	mg/kg	2.16	0.922	2.51	0.999	2.11	0.914
Copper	6010B	mg/kg	8.1	0.922	5.63	0.999	10.7	0.914
Iron	6010B	mg/kg	18800	1.84	18300	2	20900	1.83
Lead	6010B	mg/kg	12.2	0.922	15	0.999	15.3	0.914
Magnesium	6010B	mg/kg	680	23.1	556	25	385	22.8
Manganese	6010B	mg/kg	88.4	0.461	238	0.499	120	0.457
Mercury	7471A	mg/kg	< 0.293	0.293	< 0.322	0.322	< 0.312	0.312
Nickel	6010B	mg/kg	5.83	1.84	5.35	2	4.91	1.83
Potassium	6010B	mg/kg	553	46.1	829	49.9	473	45.7
Silver	6010B	mg/kg	< 1.84	1.84	< 2	2	< 1.83	1.83
Selenium	7740	mg/kg	0.433 S	0.356	0.523 S	0.368	0.476 S	0.35
Sodium	6010B	mg/kg	33.1	23.1	42.5	25	33	22.8
Thallium	6010B	mg/kg	< 23.1	23.1	< 25	25	< 22.8	22.8
Tin	6010B	mg/kg	< 23.1	23.1	< 25	25	< 22.8	22.8
Vanadium	6010B	mg/kg	36.6	0.461	25.9	0.499	26.1	0.457
Zinc	6010B	mg/kg	21.7	0.922	18.7	0.999	17.6	0.914
Misc Analyses								
Ammonia	350.1	mg/kg	9.6	6.15	14.4	6.34	19.4	6.31
Ammonia, Extractable	350.1	mg/kg	< 1.24	1.24	3.52	1.3	3.77	1.27
pH	9045C	SU	4.91	--	6.52	--	4.88	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

2007
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID Sample Date Sample Time			EE1 08/29/07 12:45		F1A 08/29/07 7:30		H2A 08/29/07 8:15	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
1,2-Dichlorobenzene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
1,3-Dichlorobenzene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
1,4-Dichlorobenzene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
2,4,5-Trichlorophenol	8270C	ug/kg	< 200	200	< 197	197	< 205	205
2,4,6-Trichlorophenol	8270C	ug/kg	< 200	200	< 197	197	< 205	205
2,4-Dichlorophenol	8270C	ug/kg	< 200	200	< 197	197	< 205	205
2,4-Dimethylphenol	8270C	ug/kg	< 200	200	< 197	197	< 205	205
2,4-Dinitrophenol	8270C	ug/kg	< 999	999	< 986	986	< 1020	1020
2,4-Dinitrotoluene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
2,6-Dinitrotoluene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
2-Chloronaphthalene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
2-Chlorophenol	8270C	ug/kg	< 200	200	< 197	197	< 205	205
2-Methylnaphthalene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
2-Methylphenol	8270C	ug/kg	< 200	200	< 197	197	< 205	205
2-Nitroaniline	8270C	ug/kg	< 999	999	< 986	986	< 1020	1020
2-Nitrophenol	8270C	ug/kg	< 200	200	< 197	197	< 205	205
3,3'-Dichlorobenzidine	8270C	ug/kg	< 400	400	< 394	394	< 410	410
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 200	200	< 197	197	< 205	205
3+4-Methylphenols	8270C	ug/kg	< 200	200	< 197	197	< 205	205
3-Nitroaniline	8270C	ug/kg	< 999	999	< 986	986	< 1020	1020
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 999	999	< 986	986	< 1020	1020
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 200	200	< 197	197	< 205	205
4-Chloro-3-Methylphenol	8270C	ug/kg	< 200	200	< 197	197	< 205	205
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 200	200	< 197	197	< 205	205
4-Nitrophenol	8270C	ug/kg	< 999	999	< 986	986	< 1020	1020
Acenaphthene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Acenaphthylene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Anthracene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Benzo (a) Anthracene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Benzo (a) Pyrene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Benzo (b) Fluoranthene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Benzo (g,h,i) Perylene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Benzo (k) Fluoranthene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Benzoic Acid	8270C	ug/kg	< 999	999	< 986	986	< 1020	1020
Benzyl Alcohol	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Benzyl Butyl Phthalate	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Chrysene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Dibenzofuran	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Diethyl Phthalate	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Dimethyl Phthalate	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Di-n-Butylphthalate	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Di-n-Octyl Phthalate	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Fluoranthene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Fluorene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Hexachlorobenzene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Hexachlorobutadiene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Hexachlorocyclopentadiene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Hexachloroethane	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Naphthalene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Nitrobenzene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 200	200	< 197	197	< 205	205
N-Nitrosodiphenylamine	8270C	ug/kg	< 200	200	< 197	197	< 205	205
P-Chloroaniline	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Pentachlorophenol	8270C	ug/kg	< 999	999	< 986	986	< 1020	1020
Phenanthrene	8270C	ug/kg	< 200	200	< 197	197	< 205	205
Phenol	8270C	ug/kg	< 200	200	< 197	197	< 205	205
P-Nitroaniline	8270C	ug/kg	< 999	999	< 986	986	< 1020	1020
Pyrene	8270C	ug/kg	< 200	200	< 197	197	< 205	205

2007
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**EE1**		**F1A**		**H2A**	
Sample Date			**08/29/07**		**08/29/07**		**08/29/07**	
Sample Time			**12:45**		**7:30**		**8:15**	
Metals			Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Arsenic	7060A	mg/kg	3.18	0.34	3.4	0.91	3.57	0.377
Aluminum	6010B	mg/kg	388	3.66	< 3.71	3.71	< 3.82	3.82
Barium	6010B	mg/kg	62.5	0.474	63.3	0.445	63.2	0.496
Beryllium	6010B	mg/kg	0.591	0.474	< 0.445	0.445	< 0.496	0.496
Cadmium	6010B	mg/kg	< 0.474	0.474	< 0.445	0.445	< 0.496	0.496
Calcium	6010B	mg/kg	500	9.48	1730	8.9	1490	9.92
Chromium	6010B	mg/kg	18.3	2.85	9.36	2.67	10.8	2.98
Cobalt	6010B	mg/kg	6.04	0.948	1.48	0.89	9.78	0.992
Copper	6010B	mg/kg	20.6	0.948	4.13	0.89	11	0.992
Iron	6010B	mg/kg	36900	1.9	11700	1.78	22400	1.98
Lead	6010B	mg/kg	15.1	0.948	11.4	0.89	11.8	0.992
Magnesium	6010B	mg/kg	1020	23.7	395	22.2	431	24.8
Manganese	6010B	mg/kg	160	0.474	170	0.445	362	0.496
Mercury	7471A	mg/kg	< 0.308	0.308	< 0.308	0.308	< 0.306	0.306
Nickel	6010B	mg/kg	8.36	1.9	2.5	1.78	4.69	1.98
Potassium	6010B	mg/kg	1350	47.4	589	44.5	834	49.6
Silver	6010B	mg/kg	< 1.9	1.9	< 1.78	1.78	< 1.98	1.98
Selenium	7740	mg/kg	0.571 S	0.34	< 0.364 S	0.364	0.417 S	0.377
Sodium	6010B	mg/kg	< 23.7	23.7	30.8	22.2	28.2	24.8
Thallium	6010B	mg/kg	< 23.7	23.7	< 22.2	22.2	< 24.8	24.8
Tin	6010B	mg/kg	< 23.7	23.7	< 22.2	22.2	< 24.8	24.8
Vanadium	6010B	mg/kg	38.5	0.474	15.7	0.445	19.2	0.496
Zinc	6010B	mg/kg	30.8	0.948	10.6	0.89	15.2	0.992
Misc Analyses								
Ammonia	350.1	mg/kg	< 6.05	6.05	11.4	6.14	13.5	6.33
Ammonia, Extractable	350.1	mg/kg	1.85	1.22	< 1.24	1.24	1.42	1.27
pH	9045C	SU	5.31	--	5.97	--	6.28	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

2007
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			HH1		L3A		N2A	
Sample Date			08/29/07		08/29/07		08/29/07	
Sample Time			12:30		9:15		9:45	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
1,2-Dichlorobenzene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
1,3-Dichlorobenzene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
1,4-Dichlorobenzene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
2,4,5-Trichlorophenol	8270C	ug/kg	< 196	196	< 201	201	< 202	202
2,4,6-Trichlorophenol	8270C	ug/kg	< 196	196	< 201	201	< 202	202
2,4-Dichlorophenol	8270C	ug/kg	< 196	196	< 201	201	< 202	202
2,4-Dimethylphenol	8270C	ug/kg	< 196	196	< 201	201	< 202	202
2,4-Dinitrophenol	8270C	ug/kg	< 981	981	< 1000	1000	< 1010	1010
2,4-Dinitrotoluene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
2,6-Dinitrotoluene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
2-Chloronaphthalene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
2-Chlorophenol	8270C	ug/kg	< 196	196	< 201	201	< 202	202
2-Methylnaphthalene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
2-Methylphenol	8270C	ug/kg	< 196	196	< 201	201	< 202	202
2-Nitroaniline	8270C	ug/kg	< 981	981	< 1000	1000	< 1010	1010
2-Nitrophenol	8270C	ug/kg	< 196	196	< 201	201	< 202	202
3,3'-Dichlorobenzidine	8270C	ug/kg	< 392	392	< 402	402	< 405	405
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 196	196	< 201	201	< 202	202
3+4-Methylphenols	8270C	ug/kg	< 196	196	< 201	201	< 202	202
3-Nitroaniline	8270C	ug/kg	< 981	981	< 1000	1000	< 1010	1010
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 981	981	< 1000	1000	< 1010	1010
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 196	196	< 201	201	< 202	202
4-Chloro-3-Methylphenol	8270C	ug/kg	< 196	196	< 201	201	< 202	202
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 196	196	< 201	201	< 202	202
4-Nitrophenol	8270C	ug/kg	< 981	981	< 1000	1000	< 1010	1010
Acenaphthene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Acenaphthylene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Anthracene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Benzo (a) Anthracene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Benzo (a) Pyrene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Benzo (b) Fluoranthene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Benzo (g,h,i) Perylene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Benzo (k) Fluoranthene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Benzoic Acid	8270C	ug/kg	< 981	981	< 1000	1000	< 1010	1010
Benzyl Alcohol	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Benzyl Butyl Phthalate	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Chrysene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Dibenzofuran	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Diethyl Phthalate	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Dimethyl Phthalate	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Di-n-Butylphthalate	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Di-n-Octyl Phthalate	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Fluoranthene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Fluorene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Hexachlorobenzene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Hexachlorobutadiene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Hexachlorocyclopentadiene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Hexachloroethane	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Naphthalene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Nitrobenzene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 196	196	< 201	201	< 202	202
N-Nitrosodiphenylamine	8270C	ug/kg	< 196	196	< 201	201	< 202	202
P-Chloroaniline	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Pentachlorophenol	8270C	ug/kg	< 981	981	< 1000	1000	< 1010	1010
Phenanthrene	8270C	ug/kg	< 196	196	< 201	201	< 202	202
Phenol	8270C	ug/kg	< 196	196	< 201	201	< 202	202
P-Nitroaniline	8270C	ug/kg	< 981	981	< 1000	1000	< 1010	1010
Pyrene	8270C	ug/kg	< 196	196	< 201	201	< 202	202

2007
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			HH1		L3A		N2A	
Sample Date			08/29/07		08/29/07		08/29/07	
Sample Time			12:30		9:15		9:45	
Metals			Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Arsenic	7060A	mg/kg	1.72	0.177	1.9	0.179	0.82	0.179
Aluminum	6010B	mg/kg	115	3.62	13.5	7.17	< 3.76	3.76
Barium	6010B	mg/kg	29.6	0.463	53.2	0.43	33.9	0.438
Beryllium	6010B	mg/kg	< 0.463	0.463	< 0.43	0.43	< 0.438	0.438
Cadmium	6010B	mg/kg	< 0.463	0.463	< 0.43	0.43	< 0.438	0.438
Calcium	6010B	mg/kg	425	9.27	2220	8.59	1050	8.75
Chromium	6010B	mg/kg	10.6	2.78	8.65	2.58	14.5	2.63
Cobalt	6010B	mg/kg	1.53	0.927	9	0.859	3.79	0.875
Copper	6010B	mg/kg	5.95	0.927	6.96	0.859	6.51	0.875
Iron	6010B	mg/kg	12300	1.85	14000	1.72	21600	1.75
Lead	6010B	mg/kg	14.5	0.927	8.55	0.859	13.9	0.875
Magnesium	6010B	mg/kg	147	23.2	875	21.5	398	21.9
Manganese	6010B	mg/kg	184	0.463	84.5	0.43	100	0.438
Mercury	7471A	mg/kg	< 0.284	0.284	< 0.302	0.302	< 0.311	0.311
Nickel	6010B	mg/kg	2.42	1.85	3.11	1.72	< 1.75	1.75
Potassium	6010B	mg/kg	350	46.3	786	43	318	43.8
Silver	6010B	mg/kg	< 1.85	1.85	< 1.72	1.72	< 1.75	1.75
Selenium	7740	mg/kg	< 0.355 S	0.355	< 0.358 S	0.358	< 0.894 S	0.894
Sodium	6010B	mg/kg	26.8	23.2	< 21.5	21.5	26	21.9
Thallium	6010B	mg/kg	< 23.2	23.2	< 21.5	21.5	< 21.9	21.9
Tin	6010B	mg/kg	< 23.2	23.2	< 21.5	21.5	< 21.9	21.9
Vanadium	6010B	mg/kg	14	0.463	14.2	0.43	23.8	0.438
Zinc	6010B	mg/kg	13.4	0.927	10.4	0.859	6.6	0.875
Misc Analyses								
Ammonia	350.1	mg/kg	9.42	6.1	7.79	6.11	9.97	6.22
Ammonia, Extractable	350.1	mg/kg	1.3	1.21	3.1	1.2	< 1.25	1.25
pH	9045C	SU	4.99	--	6.72	--	6.06	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

2007
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**P4A**		**S4A**		**U1A**	
Sample Date			**08/29/07**		**08/29/07**		**08/29/07**	
Sample Time			**10:30**		**11:00**		**11:30**	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
1,2-Dichlorobenzene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
1,3-Dichlorobenzene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
1,4-Dichlorobenzene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
2,4,5-Trichlorophenol	8270C	ug/kg	< 249	249	< 200	200	< 194	194
2,4,6-Trichlorophenol	8270C	ug/kg	< 249	249	< 200	200	< 194	194
2,4-Dichlorophenol	8270C	ug/kg	< 249	249	< 200	200	< 194	194
2,4-Dimethylphenol	8270C	ug/kg	< 249	249	< 200	200	< 194	194
2,4-Dinitrophenol	8270C	ug/kg	< 1250	1250	< 1000	1000	< 972	972
2,4-Dinitrotoluene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
2,6-Dinitrotoluene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
2-Chloronaphthalene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
2-Chlorophenol	8270C	ug/kg	< 249	249	< 200	200	< 194	194
2-Methylnaphthalene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
2-Methylphenol	8270C	ug/kg	< 249	249	< 200	200	< 194	194
2-Nitroaniline	8270C	ug/kg	< 1250	1250	< 1000	1000	< 972	972
2-Nitrophenol	8270C	ug/kg	< 249	249	< 200	200	< 194	194
3,3'-Dichlorobenzidine	8270C	ug/kg	< 499	499	< 400	400	< 389	389
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 249	249	< 200	200	< 194	194
3+4-Methylphenols	8270C	ug/kg	< 249	249	< 200	200	< 194	194
3-Nitroaniline	8270C	ug/kg	< 1250	1250	< 1000	1000	< 972	972
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 1250	1250	< 1000	1000	< 972	972
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 249	249	< 200	200	< 194	194
4-Chloro-3-Methylphenol	8270C	ug/kg	< 249	249	< 200	200	< 194	194
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 249	249	< 200	200	< 194	194
4-Nitrophenol	8270C	ug/kg	< 1250	1250	< 1000	1000	< 972	972
Acenaphthene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Acenaphthylene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Anthracene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Benzo (a) Anthracene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Benzo (a) Pyrene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Benzo (b) Fluoranthene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Benzo (g,h,i) Perylene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Benzo (k) Fluoranthene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Benzoic Acid	8270C	ug/kg	< 1250	1250	< 1000	1000	< 972	972
Benzyl Alcohol	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Benzyl Butyl Phthalate	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Chrysene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Dibenzofuran	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Diethyl Phthalate	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Dimethyl Phthalate	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Di-n-Butylphthalate	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Di-n-Octyl Phthalate	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Fluoranthene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Fluorene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Hexachlorobenzene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Hexachlorobutadiene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Hexachlorocyclopentadiene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Hexachloroethane	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Naphthalene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Nitrobenzene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 249	249	< 200	200	< 194	194
N-Nitrosodiphenylamine	8270C	ug/kg	< 249	249	< 200	200	< 194	194
P-Chloroaniline	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Pentachlorophenol	8270C	ug/kg	< 1250	1250	< 1000	1000	< 972	972
Phenanthrene	8270C	ug/kg	< 249	249	< 200	200	< 194	194
Phenol	8270C	ug/kg	< 249	249	< 200	200	< 194	194
P-Nitroaniline	8270C	ug/kg	< 1250	1250	< 1000	1000	< 972	972
Pyrene	8270C	ug/kg	< 249	249	< 200	200	< 194	194

2007
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			P4A		S4A		U1A	
Sample Date			08/29/07		08/29/07		08/29/07	
Sample Time			10:30		11:00		11:30	
Metals			Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Arsenic	7060A	mg/kg	6.92	1.11	2.35	0.369	4.11	0.367
Aluminum	6010B	mg/kg	< 4.51	4.51	< 3.6	3.6	< 3.68	3.68
Barium	6010B	mg/kg	48.4	0.589	52.1	0.465	25.7	0.436
Beryllium	6010B	mg/kg	< 0.589	0.589	< 0.465	0.465	< 0.436	0.436
Cadmium	6010B	mg/kg	< 0.589	0.589	< 0.465	0.465	< 0.436	0.436
Calcium	6010B	mg/kg	1640	11.8	1710	9.3	1040	8.73
Chromium	6010B	mg/kg	20.3	3.53	8.4	2.79	23.9	2.62
Cobalt	6010B	mg/kg	1.36	1.18	1.24	0.93	1.94	0.873
Copper	6010B	mg/kg	6.85	1.18	3.07	0.93	12.3	0.873
Iron	6010B	mg/kg	26200	2.36	9910	1.86	46800	17.5
Lead	6010B	mg/kg	12.9	1.18	10.3	0.93	12.6	0.873
Magnesium	6010B	mg/kg	447	29.4	295	23.2	260	21.8
Manganese	6010B	mg/kg	82.3	0.589	88.5	0.465	72	0.436
Mercury	7471A	mg/kg	< 0.353	0.353	< 0.301	0.301	< 0.294	0.294
Nickel	6010B	mg/kg	3.03	2.36	2.78	1.86	2.23	1.75
Potassium	6010B	mg/kg	429	58.9	356	46.5	382	43.6
Silver	6010B	mg/kg	< 2.36	2.36	< 1.86	1.86	< 1.75	1.75
Selenium	7740	mg/kg	0.579 S	0.444	< 0.369 S	0.369	0.506 S	0.367
Sodium	6010B	mg/kg	31.3	29.4	25.3	23.2	24	21.8
Thallium	6010B	mg/kg	< 29.4	29.4	< 23.2	23.2	< 21.8	21.8
Tin	6010B	mg/kg	< 29.4	29.4	< 23.2	23.2	< 21.8	21.8
Vanadium	6010B	mg/kg	30	0.589	14.2	0.465	33.3	0.436
Zinc	6010B	mg/kg	12.6	1.18	8.94	0.93	12.6	0.873
Misc Analyses								
Ammonia	350.1	mg/kg	15.5	7.56	17.7	6.09	14.8	5.94
Ammonia, Extractable	350.1	mg/kg	2.76	1.5	4.48	1.2	8.68	1.23
pH	9045C	SU	6.33	--	6.14	--	5.58	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

2007
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			X4A		Z2A	
Sample Date			08/29/07		08/29/07	
Sample Time			11:45		12:15	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 192	192	< 198	198
1,2-Dichlorobenzene	8270C	ug/kg	< 192	192	< 198	198
1,3-Dichlorobenzene	8270C	ug/kg	< 192	192	< 198	198
1,4-Dichlorobenzene	8270C	ug/kg	< 192	192	< 198	198
2,4,5-Trichlorophenol	8270C	ug/kg	< 192	192	< 198	198
2,4,6-Trichlorophenol	8270C	ug/kg	< 192	192	< 198	198
2,4-Dichlorophenol	8270C	ug/kg	< 192	192	< 198	198
2,4-Dimethylphenol	8270C	ug/kg	< 192	192	< 198	198
2,4-Dinitrophenol	8270C	ug/kg	< 959	959	< 990	990
2,4-Dinitrotoluene	8270C	ug/kg	< 192	192	< 198	198
2,6-Dinitrotoluene	8270C	ug/kg	< 192	192	< 198	198
2-Chloronaphthalene	8270C	ug/kg	< 192	192	< 198	198
2-Chlorophenol	8270C	ug/kg	< 192	192	< 198	198
2-Methylnaphthalene	8270C	ug/kg	< 192	192	< 198	198
2-Methylphenol	8270C	ug/kg	< 192	192	< 198	198
2-Nitroaniline	8270C	ug/kg	< 959	959	< 990	990
2-Nitrophenol	8270C	ug/kg	< 192	192	< 198	198
3,3'-Dichlorobenzidine	8270C	ug/kg	< 384	384	< 396	396
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 192	192	< 198	198
3+4-Methylphenols	8270C	ug/kg	< 192	192	< 198	198
3-Nitroaniline	8270C	ug/kg	< 959	959	< 990	990
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 959	959	< 990	990
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 192	192	< 198	198
4-Chloro-3-Methylphenol	8270C	ug/kg	< 192	192	< 198	198
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 192	192	< 198	198
4-Nitrophenol	8270C	ug/kg	< 959	959	< 990	990
Acenaphthene	8270C	ug/kg	< 192	192	< 198	198
Acenaphthylene	8270C	ug/kg	< 192	192	< 198	198
Anthracene	8270C	ug/kg	< 192	192	< 198	198
Benzo (a) Anthracene	8270C	ug/kg	< 192	192	< 198	198
Benzo (a) Pyrene	8270C	ug/kg	< 192	192	< 198	198
Benzo (b) Fluoranthene	8270C	ug/kg	< 192	192	< 198	198
Benzo (g,h,i) Perylene	8270C	ug/kg	< 192	192	< 198	198
Benzo (k) Fluoranthene	8270C	ug/kg	< 192	192	< 198	198
Benzoic Acid	8270C	ug/kg	< 959	959	< 990	990
Benzyl Alcohol	8270C	ug/kg	< 192	192	< 198	198
Benzyl Butyl Phthalate	8270C	ug/kg	< 192	192	< 198	198
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 192	192	< 198	198
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 192	192	< 198	198
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 192	192	< 198	198
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 192	192	< 198	198
Chrysene	8270C	ug/kg	< 192	192	< 198	198
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 192	192	< 198	198
Dibenzofuran	8270C	ug/kg	< 192	192	< 198	198
Diethyl Phthalate	8270C	ug/kg	< 192	192	< 198	198
Dimethyl Phthalate	8270C	ug/kg	< 192	192	< 198	198
Di-n-Butylphthalate	8270C	ug/kg	< 192	192	< 198	198
Di-n-Octyl Phthalate	8270C	ug/kg	< 192	192	< 198	198
Fluoranthene	8270C	ug/kg	< 192	192	< 198	198
Fluorene	8270C	ug/kg	< 192	192	< 198	198
Hexachlorobenzene	8270C	ug/kg	< 192	192	< 198	198
Hexachlorobutadiene	8270C	ug/kg	< 192	192	< 198	198
Hexachlorocyclopentadiene	8270C	ug/kg	< 192	192	< 198	198
Hexachloroethane	8270C	ug/kg	< 192	192	< 198	198
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 192	192	< 198	198
Naphthalene	8270C	ug/kg	< 192	192	< 198	198
Nitrobenzene	8270C	ug/kg	< 192	192	< 198	198
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 192	192	< 198	198
N-Nitrosodiphenylamine	8270C	ug/kg	< 192	192	< 198	198
P-Chloroaniline	8270C	ug/kg	< 192	192	< 198	198
Pentachlorophenol	8270C	ug/kg	< 959	959	< 990	990
Phenanthrene	8270C	ug/kg	< 192	192	< 198	198
Phenol	8270C	ug/kg	< 192	192	< 198	198
P-Nitroaniline	8270C	ug/kg	< 959	959	< 990	990
Pyrene	8270C	ug/kg	< 192	192	< 198	198

2007
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			X4A		Z2A	
Sample Date			08/29/07		08/29/07	
Sample Time			11:45		12:15	
Metals			Result	Reporting Limit	Result	Reporting Limit
Arsenic	7060A	mg/kg	1.89	0.161	3.11	0.357
Aluminum	6010B	mg/kg	163	3.56	3.69	3.61
Barium	6010B	mg/kg	34.6	0.448	55.4	0.466
Beryllium	6010B	mg/kg	< 0.448	0.448	< 0.466	0.466
Cadmium	6010B	mg/kg	< 0.448	0.448	< 0.466	0.466
Calcium	6010B	mg/kg	351	8.96	1140	9.32
Chromium	6010B	mg/kg	10.7	2.69	22	2.8
Cobalt	6010B	mg/kg	1.53	0.896	2.62	0.932
Copper	6010B	mg/kg	7.08	0.896	5.78	0.932
Iron	6010B	mg/kg	14200	1.79	28400	1.86
Lead	6010B	mg/kg	7.41	0.896	14.6	0.932
Magnesium	6010B	mg/kg	222	22.4	372	23.3
Manganese	6010B	mg/kg	71.6	0.448	118	0.466
Mercury	7471A	mg/kg	< 0.293	0.293	< 0.298	0.298
Nickel	6010B	mg/kg	2.51	1.79	3.66	1.86
Potassium	6010B	mg/kg	402	44.8	453	46.6
Silver	6010B	mg/kg	< 1.79	1.79	< 1.86	1.86
Selenium	7740	mg/kg	< 0.322 S	0.322	< 0.357 S	0.357
Sodium	6010B	mg/kg	23.7	22.4	25.6	23.3
Thallium	6010B	mg/kg	< 22.4	22.4	< 23.3	23.3
Tin	6010B	mg/kg	< 22.4	22.4	< 23.3	23.3
Vanadium	6010B	mg/kg	17.8	0.448	33.4	0.466
Zinc	6010B	mg/kg	10.8	0.896	14.5	0.932
Misc Analyses						
Ammonia	350.1	mg/kg	9.94	5.89	21.3	5.95
Ammonia, Extractable	350.1	mg/kg	1.39	1.19	2.72	1.2
pH	9045C	SU	4.71	--	5.72	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

2008
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			B4A		EE1		F1A	
Sample Date			08/27/08		08/27/08		08/27/08	
Sample Time			7:45		15:45		8:00	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
1,2-Dichlorobenzene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
1,3-Dichlorobenzene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
1,4-Dichlorobenzene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
2,4,5-Trichlorophenol	8270C	ug/kg	< 186	186	< 195	195	< 176	176
2,4,6-Trichlorophenol	8270C	ug/kg	< 186	186	< 195	195	< 176	176
2,4-Dichlorophenol	8270C	ug/kg	< 186	186	< 195	195	< 176	176
2,4-Dimethylphenol	8270C	ug/kg	< 186	186	< 195	195	< 176	176
2,4-Dinitrophenol	8270C	ug/kg	< 929	929	< 973	973	< 878	878
2,4-Dinitrotoluene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
2,6-Dinitrotoluene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
2-Chloronaphthalene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
2-Chlorophenol	8270C	ug/kg	< 186	186	< 195	195	< 176	176
2-Methylnaphthalene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
2-Methylphenol	8270C	ug/kg	< 186	186	< 195	195	< 176	176
2-Nitroaniline	8270C	ug/kg	< 929	929	< 973	973	< 878	878
2-Nitrophenol	8270C	ug/kg	< 186	186	< 195	195	< 176	176
3,3'-Dichlorobenzidine	8270C	ug/kg	< 371	371	< 389	389	< 351	351
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 186	186	< 195	195	< 176	176
3+4-Methylphenols	8270C	ug/kg	< 186	186	< 195	195	< 176	176
3-Nitroaniline	8270C	ug/kg	< 929	929	< 973	973	< 878	878
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 929	929	< 973	973	< 878	878
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 186	186	< 195	195	< 176	176
4-Chloro-3-Methylphenol	8270C	ug/kg	< 186	186	< 195	195	< 176	176
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 186	186	< 195	195	< 176	176
4-Nitrophenol	8270C	ug/kg	< 929	929	< 973	973	< 878	878
Acenaphthene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Acenaphthylene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Anthracene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Benzo (a) Anthracene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Benzo (a) Pyrene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Benzo (b) Fluoranthene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Benzo (g,h,i) Perylene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Benzo (k) Fluoranthene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Benzoic Acid	8270C	ug/kg	< 5630	5630	< 5900	5900	< 5320	5320
Benzyl Alcohol	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Benzyl Butyl Phthalate	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Chrysene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Dibenzofuran	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Diethyl Phthalate	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Dimethyl Phthalate	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Di-n-Butylphthalate	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Di-n-Octyl Phthalate	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Fluoranthene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Fluorene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Hexachlorobenzene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Hexachlorobutadiene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Hexachlorocyclopentadiene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Hexachloroethane	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Naphthalene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Nitrobenzene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 186	186	< 195	195	< 176	176
N-Nitrosodiphenylamine	8270C	ug/kg	< 186	186	< 195	195	< 176	176
P-Chloroaniline	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Pentachlorophenol	8270C	ug/kg	< 929	929	< 973	973	< 878	878
Phenanthrene	8270C	ug/kg	< 186	186	< 195	195	< 176	176
Phenol	8270C	ug/kg	< 186	186	< 195	195	< 176	176
P-Nitroaniline	8270C	ug/kg	< 929	929	< 973	973	< 878	878
Pyrene	8270C	ug/kg	< 186	186	< 195	195	< 176	176

2008
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			B4A		EE1		F1A	
Sample Date			08/27/08		08/27/08		08/27/08	
Sample Time			7:45		15:45		8:00	
Metals			Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Arsenic	7060A	mg/kg	3.62	3.43	6.37	3.56	4.82	3.28
Aluminum	6010B	mg/kg	< 3.43	0.876	292	0.908	< 3.28	0.802
Barium	6010B	mg/kg	99	0.435	68	0.425	102	0.374
Beryllium	6010B	mg/kg	0.516	0.435	0.668	0.425	0.588	0.374
Cadmium	6010B	mg/kg	0.589	0.435	0.444	0.425	0.487	0.374
Calcium	6010B	mg/kg	2300	8.7	522	8.5	1660	7.48
Chromium	6010B	mg/kg	42.7	2.61	20.7	2.55	34.4	2.24
Cobalt	6010B	mg/kg	3.67	0.87	5.11	0.85	2.31	0.748
Copper	6010B	mg/kg	11	0.87	23.6	0.85	14.2	0.748
Iron	6010B	mg/kg	44800	26.1	45000	51	38700	22.4
Lead	6010B	mg/kg	22.2	0.87	15.8	0.85	18.7	0.748
Magnesium	6010B	mg/kg	885	21.7	1170	21.2	1120	18.7
Manganese	6010B	mg/kg	236	0.435	195	0.425	278	0.374
Mercury	7471A	mg/kg	< 0.287	0.287	< 0.296	0.296	< 0.274	0.274
Nickel	6010B	mg/kg	7.11	1.74	9.98	1.7	8.56	1.5
Potassium	6010B	mg/kg	1580	43.5	1720	42.5	1750	37.4
Selenium	7740	mg/kg	< 0.876	0.876	< 0.908	0.908	< 0.802	0.802
Silver	6010B	mg/kg	< 1.74	1.74	< 1.7	1.7	< 1.5	1.5
Sodium	6010B	mg/kg	62.2	21.7	21.3	21.2	53.2	18.7
Thallium	6010B	mg/kg	< 21.7	21.7	< 21.2	21.2	< 18.7	18.7
Tin	6010B	mg/kg	< 21.7	21.7	< 21.2	21.2	< 18.7	18.7
Vanadium	6010B	mg/kg	58	0.435	44.6	0.425	47.8	0.374
Zinc	6010B	mg/kg	28.6	0.87	35.4	0.85	33.9	0.748
Misc Analyses								
Ammonia	350.1	mg/kg	22.7	5.72	< 5.91	5.91	25.5	5.34
Ammonia, Extractable	350.1	mg/kg	3.25	1.14	2.31	1.19	7.37	1.09
pH	9045C	SU	6.05	--	5.18	--	5.56	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

2008
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID **Sample Date** **Sample Time**			H2A 08/27/08 8:45		HH1 08/27/08 15:30		L3A 08/27/08 10:45	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
1,2-Dichlorobenzene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
1,3-Dichlorobenzene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
1,4-Dichlorobenzene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
2,4,5-Trichlorophenol	8270C	ug/kg	< 185	185	< 181	181	< 186	186
2,4,6-Trichlorophenol	8270C	ug/kg	< 185	185	< 181	181	< 186	186
2,4-Dichlorophenol	8270C	ug/kg	< 185	185	< 181	181	< 186	186
2,4-Dimethylphenol	8270C	ug/kg	< 185	185	< 181	181	< 186	186
2,4-Dinitrophenol	8270C	ug/kg	< 926	926	< 907	907	< 932	932
2,4-Dinitrotoluene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
2,6-Dinitrotoluene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
2-Chloronaphthalene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
2-Chlorophenol	8270C	ug/kg	< 185	185	< 181	181	< 186	186
2-Methylnaphthalene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
2-Methylphenol	8270C	ug/kg	< 185	185	< 181	181	< 186	186
2-Nitroaniline	8270C	ug/kg	< 926	926	< 907	907	< 932	932
2-Nitrophenol	8270C	ug/kg	< 185	185	< 181	181	< 186	186
3,3'-Dichlorobenzidine	8270C	ug/kg	< 370	370	< 363	363	< 373	373
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 185	185	< 181	181	< 186	186
3+4-Methylphenols	8270C	ug/kg	< 185	185	< 181	181	< 186	186
3-Nitroaniline	8270C	ug/kg	< 926	926	< 907	907	< 932	932
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 926	926	< 907	907	< 932	932
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 185	185	< 181	181	< 186	186
4-Chloro-3-Methylphenol	8270C	ug/kg	< 185	185	< 181	181	< 186	186
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 185	185	< 181	181	< 186	186
4-Nitrophenol	8270C	ug/kg	< 926	926	< 907	907	< 932	932
Acenaphthene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Acenaphthylene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Anthracene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Benzo (a) Anthracene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Benzo (a) Pyrene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Benzo (b) Fluoranthene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Benzo (g,h,i) Perylene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Benzo (k) Fluoranthene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Benzoic Acid	8270C	ug/kg	< 5610	5610	< 5500	5500	< 5650	5650
Benzyl Alcohol	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Benzyl Butyl Phthalate	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Chrysene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Dibenzofuran	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Diethyl Phthalate	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Dimethyl Phthalate	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Di-n-Butylphthalate	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Di-n-Octyl Phthalate	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Fluoranthene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Fluorene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Hexachlorobenzene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Hexachlorobutadiene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Hexachlorocyclopentadiene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Hexachloroethane	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Naphthalene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Nitrobenzene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 185	185	< 181	181	< 186	186
N-Nitrosodiphenylamine	8270C	ug/kg	< 185	185	< 181	181	< 186	186
P-Chloroaniline	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Pentachlorophenol	8270C	ug/kg	< 926	926	< 907	907	< 932	932
Phenanthrene	8270C	ug/kg	< 185	185	< 181	181	< 186	186
Phenol	8270C	ug/kg	< 185	185	< 181	181	< 186	186
P-Nitroaniline	8270C	ug/kg	< 926	926	< 907	907	< 932	932
Pyrene	8270C	ug/kg	< 185	185	< 181	181	< 186	186

2008
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			H2A		HH1		L3A	
Sample Date			08/27/08		08/27/08		08/27/08	
Sample Time			8:45		15:30		10:45	
Metals			Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Arsenic	7060A	mg/kg	3.06	3.38	4.81	3.38	4.53	3.47
Aluminum	6010B	mg/kg	< 3.38	0.859	< 3.38	0.864	< 3.47	0.876
Barium	6010B	mg/kg	60	0.405	35	0.422	79.3	0.435
Beryllium	6010B	mg/kg	0.581	0.405	< 0.422	0.422	0.6	0.435
Cadmium	6010B	mg/kg	0.495	0.405	< 0.422	0.422	< 0.435	0.435
Calcium	6010B	mg/kg	1720	8.1	463	8.44	2090	8.69
Chromium	6010B	mg/kg	23.3	2.43	18.9	2.53	14.7	2.61
Cobalt	6010B	mg/kg	15.4	0.81	2.13	0.844	5.41	0.869
Copper	6010B	mg/kg	13	0.81	8.27	0.844	15	0.869
Iron	6010B	mg/kg	39100	24.3	28100	2.53	24400	2.61
Lead	6010B	mg/kg	14.8	0.81	13.5	0.844	12.3	0.869
Magnesium	6010B	mg/kg	505	20.2	255	21.1	878	21.7
Manganese	6010B	mg/kg	486	0.405	261	0.422	86.2	0.435
Mercury	7471A	mg/kg	< 0.28	0.28	< 0.282	0.282	< 0.288	0.288
Nickel	6010B	mg/kg	4.4	1.62	3.31	1.69	5.55	1.74
Potassium	6010B	mg/kg	923	40.5	553	42.2	1490	43.5
Selenium	7740	mg/kg	< 0.859	0.859	< 0.864	0.864	< 0.876	0.876
Silver	6010B	mg/kg	< 1.62	1.62	< 1.69	1.69	< 1.74	1.74
Sodium	6010B	mg/kg	34.2	20.2	26.7	21.1	45	21.7
Thallium	6010B	mg/kg	< 20.2	20.2	< 21.1	21.1	< 21.7	21.7
Tin	6010B	mg/kg	< 20.2	20.2	< 21.1	21.1	< 21.7	21.7
Vanadium	6010B	mg/kg	31	0.405	28.8	0.422	24.2	0.435
Zinc	6010B	mg/kg	19.3	0.81	20.7	0.844	21.8	0.869
Misc Analyses								
Ammonia	350.1	mg/kg	17.9	5.49	14.2	5.65	12.7	5.75
Ammonia, Extractable	350.1	mg/kg	2.58	1.13	1.97	1.13	< 1.16	1.16
pH	9045C	SU	6.38	--	5.09	--	6.78	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" samp
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting lin

2008
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			N2A		P4A		S4A	
Sample Date			08/27/08		08/27/08		08/27/08	
Sample Time			12:45		13:30		14:00	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
1,2-Dichlorobenzene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
1,3-Dichlorobenzene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
1,4-Dichlorobenzene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
2,4,5-Trichlorophenol	8270C	ug/kg	< 181	181	< 178	178	< 171	171
2,4,6-Trichlorophenol	8270C	ug/kg	< 181	181	< 178	178	< 171	171
2,4-Dichlorophenol	8270C	ug/kg	< 181	181	< 178	178	< 171	171
2,4-Dimethylphenol	8270C	ug/kg	< 181	181	< 178	178	< 171	171
2,4-Dinitrophenol	8270C	ug/kg	< 904	904	< 891	891	< 855	855
2,4-Dinitrotoluene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
2,6-Dinitrotoluene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
2-Chloronaphthalene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
2-Chlorophenol	8270C	ug/kg	< 181	181	< 178	178	< 171	171
2-Methylnaphthalene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
2-Methylphenol	8270C	ug/kg	< 181	181	< 178	178	< 171	171
2-Nitroaniline	8270C	ug/kg	< 904	904	< 891	891	< 855	855
2-Nitrophenol	8270C	ug/kg	< 181	181	< 178	178	< 171	171
3,3'-Dichlorobenzidine	8270C	ug/kg	< 362	362	< 356	356	< 342	342
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 181	181	< 178	178	< 171	171
3+4-Methylphenols	8270C	ug/kg	< 181	181	< 178	178	< 171	171
3-Nitroaniline	8270C	ug/kg	< 904	904	< 891	891	< 855	855
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 904	904	< 891	891	< 855	855
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 181	181	< 178	178	< 171	171
4-Chloro-3-Methylphenol	8270C	ug/kg	< 181	181	< 178	178	< 171	171
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 181	181	< 178	178	< 171	171
4-Nitrophenol	8270C	ug/kg	< 904	904	< 891	891	< 855	855
Acenaphthene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Acenaphthylene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Anthracene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Benzo (a) Anthracene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Benzo (a) Pyrene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Benzo (b) Fluoranthene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Benzo (g,h,i) Perylene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Benzo (k) Fluoranthene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Benzoic Acid	8270C	ug/kg	< 5480	5480	< 5400	5400	< 5180	5180
Benzyl Alcohol	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Benzyl Butyl Phthalate	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	387	181	< 178	178	< 171	171
Chrysene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Dibenzofuran	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Diethyl Phthalate	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Dimethyl Phthalate	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Di-n-Butylphthalate	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Di-n-Octyl Phthalate	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Fluoranthene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Fluorene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Hexachlorobenzene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Hexachlorobutadiene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Hexachlorocyclopentadiene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Hexachloroethane	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Naphthalene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Nitrobenzene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 181	181	< 178	178	< 171	171
N-Nitrosodiphenylamine	8270C	ug/kg	< 181	181	< 178	178	< 171	171
P-Chloroaniline	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Pentachlorophenol	8270C	ug/kg	< 904	904	< 891	891	< 855	855
Phenanthrene	8270C	ug/kg	< 181	181	< 178	178	< 171	171
Phenol	8270C	ug/kg	< 181	181	< 178	178	< 171	171
P-Nitroaniline	8270C	ug/kg	< 904	904	< 891	891	< 855	855
Pyrene	8270C	ug/kg	< 181	181	< 178	178	< 171	171

2008
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			N2A		P4A		S4A	
Sample Date			08/27/08		08/27/08		08/27/08	
Sample Time			12:45		13:30		14:00	
Metals			Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Arsenic	7060A	mg/kg	5.83	3.33	6.3	3.28	4.96	3.24
Aluminum	6010B	mg/kg	< 3.33	0.773	< 3.28	0.799	< 3.24	0.819
Barium	6010B	mg/kg	42.7	0.415	49.8	0.399	67.7	0.409
Beryllium	6010B	mg/kg	0.55	0.415	< 0.399	0.399	< 0.409	0.409
Cadmium	6010B	mg/kg	0.418	0.415	< 0.399	0.399	< 0.409	0.409
Calcium	6010B	mg/kg	1430	8.3	1730	7.99	1810	8.19
Chromium	6010B	mg/kg	26.9	2.49	19	2.4	18.4	2.46
Cobalt	6010B	mg/kg	2.23	0.83	1.75	0.799	1.5	0.819
Copper	6010B	mg/kg	19.6	0.83	9.4	0.799	6.93	0.819
Iron	6010B	mg/kg	48600	49.8	23800	2.4	21000	2.46
Lead	6010B	mg/kg	15.1	0.83	12	0.799	14.1	0.819
Magnesium	6010B	mg/kg	667	20.8	669	20	678	20.5
Manganese	6010B	mg/kg	98	0.415	104	0.399	120	0.409
Mercury	7471A	mg/kg	< 0.277	0.277	< 0.272	0.272	< 0.268	0.268
Nickel	6010B	mg/kg	4.81	1.66	4.16	1.6	4.9	1.64
Potassium	6010B	mg/kg	688	41.5	691	39.9	742	40.9
Selenium	7740	mg/kg	< 0.773	0.773	< 0.799	0.799	< 0.819	0.819
Silver	6010B	mg/kg	< 1.66	1.66	< 1.6	1.6	< 1.64	1.64
Sodium	6010B	mg/kg	43.5	20.8	47.6	20	39.8	20.5
Thallium	6010B	mg/kg	< 20.8	20.8	< 20	20	< 20.5	20.5
Tin	6010B	mg/kg	< 20.8	20.8	< 20	20	< 20.5	20.5
Vanadium	6010B	mg/kg	42.8	0.415	26.7	0.399	30.7	0.409
Zinc	6010B	mg/kg	21	0.83	18.3	0.799	21.2	0.819
Misc Analyses								
Ammonia	350.1	mg/kg	22.3	5.5	13.7	5.32	20.9	5.3
Ammonia, Extractable	350.1	mg/kg	3.3	1.11	< 1.09	1.09	4.7	1.08
pH	9045C	SU	6.29	--	6.25	--	6.12	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" samp
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting lin

2008
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			U1A		X4A		Z2A	
Sample Date			08/27/08		08/27/08		08/27/08	
Sample Time			14:30		14:45		15:15	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
1,2-Dichlorobenzene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
1,3-Dichlorobenzene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
1,4-Dichlorobenzene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
2,4,5-Trichlorophenol	8270C	ug/kg	< 180	180	< 181	181	< 176	176
2,4,6-Trichlorophenol	8270C	ug/kg	< 180	180	< 181	181	< 176	176
2,4-Dichlorophenol	8270C	ug/kg	< 180	180	< 181	181	< 176	176
2,4-Dimethylphenol	8270C	ug/kg	< 180	180	< 181	181	< 176	176
2,4-Dinitrophenol	8270C	ug/kg	< 898	898	< 906	906	< 879	879
2,4-Dinitrotoluene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
2,6-Dinitrotoluene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
2-Chloronaphthalene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
2-Chlorophenol	8270C	ug/kg	< 180	180	< 181	181	< 176	176
2-Methylnaphthalene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
2-Methylphenol	8270C	ug/kg	< 180	180	< 181	181	< 176	176
2-Nitroaniline	8270C	ug/kg	< 898	898	< 906	906	< 879	879
2-Nitrophenol	8270C	ug/kg	< 180	180	< 181	181	< 176	176
3,3'-Dichlorobenzidine	8270C	ug/kg	< 359	359	< 362	362	< 351	351
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 180	180	< 181	181	< 176	176
3+4-Methylphenols	8270C	ug/kg	< 180	180	< 181	181	< 176	176
3-Nitroaniline	8270C	ug/kg	< 898	898	< 906	906	< 879	879
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 898	898	< 906	906	< 879	879
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 180	180	< 181	181	< 176	176
4-Chloro-3-Methylphenol	8270C	ug/kg	< 180	180	< 181	181	< 176	176
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 180	180	< 181	181	< 176	176
4-Nitrophenol	8270C	ug/kg	< 898	898	< 906	906	< 879	879
Acenaphthene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Acenaphthylene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Anthracene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Benzo (a) Anthracene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Benzo (a) Pyrene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Benzo (b) Fluoranthene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Benzo (g,h,i) Perylene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Benzo (k) Fluoranthene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Benzoic Acid	8270C	ug/kg	< 5440	5440	< 5490	5490	< 5330	5330
Benzyl Alcohol	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Benzyl Butyl Phthalate	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Chrysene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Dibenzofuran	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Diethyl Phthalate	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Dimethyl Phthalate	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Di-n-Butylphthalate	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Di-n-Octyl Phthalate	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Fluoranthene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Fluorene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Hexachlorobenzene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Hexachlorobutadiene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Hexachlorocyclopentadiene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Hexachloroethane	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Naphthalene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Nitrobenzene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 180	180	< 181	181	< 176	176
N-Nitrosodiphenylamine	8270C	ug/kg	< 180	180	< 181	181	< 176	176
P-Chloroaniline	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Pentachlorophenol	8270C	ug/kg	< 898	898	< 906	906	< 879	879
Phenanthrene	8270C	ug/kg	< 180	180	< 181	181	< 176	176
Phenol	8270C	ug/kg	< 180	180	< 181	181	< 176	176
P-Nitroaniline	8270C	ug/kg	< 898	898	< 906	906	< 879	879
Pyrene	8270C	ug/kg	< 180	180	< 181	181	< 176	176

2008
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			U1A		X4A		Z2A	
Sample Date			08/27/08		08/27/08		08/27/08	
Sample Time			14:30		14:45		15:15	
Metals			Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Arsenic	7060A	mg/kg	6.43	3.38	1.51	3.3	5.19	3.25
Aluminum	6010B	mg/kg	< 3.38	0.867	126	0.828	< 3.25	0.814
Barium	6010B	mg/kg	44.9	0.424	34.7	0.388	69.7	0.401
Beryllium	6010B	mg/kg	0.513	0.424	< 0.388	0.388	< 0.401	0.401
Cadmium	6010B	mg/kg	0.428	0.424	< 0.388	0.388	0.468	0.401
Calcium	6010B	mg/kg	1350	8.47	289	7.76	1650	8.02
Chromium	6010B	mg/kg	30.9	2.54	12.8	2.33	21.4	2.41
Cobalt	6010B	mg/kg	2.74	0.847	1.93	0.776	1.18	0.802
Copper	6010B	mg/kg	21.7	0.847	7.91	0.776	8.58	0.802
Iron	6010B	mg/kg	56100	50.8	16400	2.33	34800	24.1
Lead	6010B	mg/kg	15	0.847	8.81	0.776	16.1	0.802
Magnesium	6010B	mg/kg	628	21.2	407	19.4	549	20.1
Manganese	6010B	mg/kg	131	0.424	129	0.388	145	0.401
Mercury	7471A	mg/kg	< 0.28	0.28	< 0.275	0.275	< 0.269	0.269
Nickel	6010B	mg/kg	6.85	1.69	4.39	1.55	4.92	1.6
Potassium	6010B	mg/kg	980	42.4	771	38.8	666	40.1
Selenium	7740	mg/kg	< 0.867	0.867	< 0.828	0.828	< 0.814	0.814
Silver	6010B	mg/kg	< 1.69	1.69	< 1.55	1.55	< 1.6	1.6
Sodium	6010B	mg/kg	58.9	21.2	33.5	19.4	44.2	20.1
Thallium	6010B	mg/kg	< 21.2	21.2	< 19.4	19.4	< 20.1	20.1
Tin	6010B	mg/kg	< 21.2	21.2	< 19.4	19.4	< 20.1	20.1
Vanadium	6010B	mg/kg	45.9	0.424	21.4	0.388	38.2	0.401
Zinc	6010B	mg/kg	25.2	0.847	16.6	0.776	23.2	0.802
Misc Analyses								
Ammonia	350.1	mg/kg	28.9	5.6	15.9	5.49	29	5.4
Ammonia, Extractable	350.1	mg/kg	7.3	1.13	4.82	1.1	3.71	1.08
pH	9045C	SU	6.09	--	5.55	--	5.72	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" samp
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting lin

2009
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			AA1		B4A		DD1	
Sample Date			08/28/09		08/28/09		08/28/09	
Sample Time			16:00		10:15		16:15	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
1,2-Dichlorobenzene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
1,3-Dichlorobenzene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
1,4-Dichlorobenzene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
2,4,5-Trichlorophenol	8270C	ug/kg	< 216	216	< 193	193	< 219	219
2,4,6-Trichlorophenol	8270C	ug/kg	< 216	216	< 193	193	< 219	219
2,4-Dichlorophenol	8270C	ug/kg	< 216	216	< 193	193	< 219	219
2,4-Dimethylphenol	8270C	ug/kg	< 216	216	< 193	193	< 219	219
2,4-Dinitrophenol	8270C	ug/kg	< 216	216	< 193	193	< 219	219
2,4-Dinitrotoluene	8270C	ug/kg	< 1080	1080	< 964	964	< 1100	1100
2,6-Dinitrotoluene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
2-Chloronaphthalene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
2-Chlorophenol	8270C	ug/kg	< 216	216	< 193	193	< 219	219
2-Methylnaphthalene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
2-Methylphenol	8270C	ug/kg	< 216	216	< 193	193	< 219	219
2-Nitroaniline	8270C	ug/kg	< 216	216	< 193	193	< 219	219
2-Nitrophenol	8270C	ug/kg	< 1080	1080	< 964	964	< 1100	1100
3,3'-Dichlorobenzidine	8270C	ug/kg	< 216	216	< 193	193	< 219	219
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 432	432	< 386	386	< 438	438
3+4-Methylphenols	8270C	ug/kg	< 216	216	< 193	193	< 219	219
3-Nitroaniline	8270C	ug/kg	< 216	216	< 193	193	< 219	219
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 1080	1080	< 964	964	< 1100	1100
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 1080	1080	< 964	964	< 1100	1100
4-Chloro-3-Methylphenol	8270C	ug/kg	< 216	216	< 193	193	< 219	219
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 216	216	< 193	193	< 219	219
4-Nitrophenol	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Acenaphthene	8270C	ug/kg	< 1080	1080	< 964	964	< 1100	1100
Acenaphthylene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Anthracene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Benzo (a) Anthracene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Benzo (a) Pyrene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Benzo (b) Fluoranthene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Benzo (g,h,i) Perylene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Benzo (k) Fluoranthene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Benzoic Acid	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Benzyl Alcohol	8270C	ug/kg	< 6550	6550	< 5840	5840	< 6640	6640
Benzyl Butyl Phthalate	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Chrysene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Dibenzofuran	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Diethyl Phthalate	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Dimethyl Phthalate	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Di-n-Butylphthalate	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Di-n-Octyl Phthalate	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Fluoranthene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Fluorene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Hexachlorobenzene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Hexachlorobutadiene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Hexachlorocyclopentadiene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Hexachloroethane	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Naphthalene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Nitrobenzene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 216	216	< 193	193	< 219	219
N-Nitrosodiphenylamine	8270C	ug/kg	< 216	216	< 193	193	< 219	219
P-Chloroaniline	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Pentachlorophenol	8270C	ug/kg	< 1080	1080	< 964	964	< 1100	1100
Phenanthrene	8270C	ug/kg	< 216	216	< 193	193	< 219	219
Phenol	8270C	ug/kg	< 216	216	< 193	193	< 219	219
P-Nitroaniline	8270C	ug/kg	< 1080	1080	< 964	964	< 1100	1100
Pyrene	8270C	ug/kg	< 216	216	< 193	193	< 219	219

2009
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			AA1		B4A		DD1	
Sample Date			08/28/09		08/28/09		08/28/09	
Sample Time			16:00		10:15		16:15	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	65.1	3.58	< 3.38	3.38	141	3.88
Arsenic	6020	mg/kg	3.98	0.338	2.64	0.342	4.29	0.375
Barium	6010B	mg/kg	54.3	0.435	107	0.429	51.5	0.47
Beryllium	6010B	mg/kg	< 0.435	0.435	0.488	0.429	< 0.47	0.47
Cadmium	6010B	mg/kg	< 0.435	0.435	< 0.429	0.429	< 0.47	0.47
Calcium	6010B	mg/kg	312	8.7	2050	8.58	250	9.39
Chromium	6010B	mg/kg	16.5	2.61	21.6	2.57	18.1	2.82
Cobalt	6010B	mg/kg	1.29	0.87	2.76	0.858	1.55	0.939
Copper	6010B	mg/kg	7.1	0.87	9.5	0.858	12.5	0.939
Iron	6010B	mg/kg	18900 B	2.61	20100	2.57	24500 B	2.82
Lead	6010B	mg/kg	13.2	0.87	17.4	0.858	19.9	0.939
Magnesium	6010B	mg/kg	318	21.8	1030	21.5	310	23.5
Manganese	6010B	mg/kg	112	0.435	235	0.429	167	0.47
Mercury	7471A	mg/kg	< 0.303	0.303	< 0.276	0.276	< 0.324	0.324
Nickel	6010B	mg/kg	4.48	1.74	7.04	1.72	5.29	1.88
Potassium	6010B	mg/kg	242	43.5	1670	42.9	383	47
Selenium	6020	mg/kg	0.468	0.225	0.342	0.228	0.493	0.25
Silver	6010B	mg/kg	< 1.74	1.74	< 1.72	1.72	< 1.88	1.88
Sodium	6010B	mg/kg	< 21.8	21.8	42.7	21.5	< 23.5	23.5
Thallium	6010B	mg/kg	< 21.8	21.8	< 21.5	21.5	< 23.5	23.5
Tin	6010B	mg/kg	< 21.8	21.8	< 21.5	21.5	< 23.5	23.5
Vanadium	6010B	mg/kg	29.1	0.435	35.2	0.429	28.6	0.47
Zinc	6010B	mg/kg	13.9	0.87	29.8	0.858	18.2	0.939
Misc Analyses								
Ammonia	350.1	mg/kg	6.45	6	15.2	5.64	9.15	6.37
Ammonia, Extractable	350.1	mg/kg	< 1.19	1.19	2.64	1.13	2.13	1.29
pH	9045D	SU	5.17	--	6.2	--	5.24	--

2009
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID Sample Date Sample Time			EE1 08/28/09 15:45		F1A 08/28/09 10:30		H2A 08/28/09 11:15	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
1,2-Dichlorobenzene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
1,3-Dichlorobenzene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
1,4-Dichlorobenzene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
2,4,5-Trichlorophenol	8270C	ug/kg	< 211	211	< 207	207	< 214	214
2,4,6-Trichlorophenol	8270C	ug/kg	< 211	211	< 207	207	< 214	214
2,4-Dichlorophenol	8270C	ug/kg	< 211	211	< 207	207	< 214	214
2,4-Dimethylphenol	8270C	ug/kg	< 211	211	< 207	207	< 214	214
2,4-Dinitrophenol	8270C	ug/kg	< 211	211	< 207	207	< 214	214
2,4-Dinitrotoluene	8270C	ug/kg	< 1050	1050	< 1040	1040	< 1070	1070
2,6-Dinitrotoluene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
2-Chloronaphthalene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
2-Chlorophenol	8270C	ug/kg	< 211	211	< 207	207	< 214	214
2-Methylnaphthalene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
2-Methylphenol	8270C	ug/kg	< 211	211	< 207	207	< 214	214
2-Nitroaniline	8270C	ug/kg	< 211	211	< 207	207	< 214	214
2-Nitrophenol	8270C	ug/kg	< 1050	1050	< 1040	1040	< 1070	1070
3,3'-Dichlorobenzidine	8270C	ug/kg	< 211	211	< 207	207	< 214	214
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 422	422	< 414	414	< 428	428
3+4-Methylphenols	8270C	ug/kg	< 211	211	< 207	207	< 214	214
3-Nitroaniline	8270C	ug/kg	< 211	211	< 207	207	< 214	214
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 1050	1050	< 1040	1040	< 1070	1070
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 1050	1050	< 1040	1040	< 1070	1070
4-Chloro-3-Methylphenol	8270C	ug/kg	< 211	211	< 207	207	< 214	214
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 211	211	< 207	207	< 214	214
4-Nitrophenol	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Acenaphthene	8270C	ug/kg	< 1050	1050	< 1040	1040	< 1070	1070
Acenaphthylene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Anthracene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Benzo (a) Anthracene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Benzo (a) Pyrene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Benzo (b) Fluoranthene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Benzo (g,h,i) Perylene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Benzo (k) Fluoranthene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Benzoic Acid	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Benzyl Alcohol	8270C	ug/kg	< 6390	6390	< 6280	6280	< 6480	6480
Benzyl Butyl Phthalate	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Chrysene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Dibenzofuran	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Diethyl Phthalate	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Dimethyl Phthalate	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Di-n-Butylphthalate	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Di-n-Octyl Phthalate	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Fluoranthene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Fluorene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Hexachlorobenzene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Hexachlorobutadiene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Hexachlorocyclopentadiene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Hexachloroethane	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Naphthalene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Nitrobenzene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 211	211	< 207	207	< 214	214
N-Nitrosodiphenylamine	8270C	ug/kg	< 211	211	< 207	207	< 214	214
P-Chloroaniline	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Pentachlorophenol	8270C	ug/kg	< 1050	1050	< 1040	1040	< 1070	1070
Phenanthrene	8270C	ug/kg	< 211	211	< 207	207	< 214	214
Phenol	8270C	ug/kg	< 211	211	< 207	207	< 214	214
P-Nitroaniline	8270C	ug/kg	< 1050	1050	< 1040	1040	< 1070	1070
Pyrene	8270C	ug/kg	< 211	211	< 207	207	< 214	214

2009
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**EE1**		**F1A**		**H2A**	
Sample Date			**08/28/09**		**08/28/09**		**08/28/09**	
Sample Time			**15:45**		**10:30**		**11:15**	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	334	3.54	< 3.29	3.29	< 3.5	3.5
Arsenic	6020	mg/kg	1.61	0.351	2.61	0.329	3	0.345
Barium	6010B	mg/kg	46.1	0.446	89.4	0.42	87.9	0.429
Beryllium	6010B	mg/kg	0.571	0.446	0.507	0.42	0.618	0.429
Cadmium	6010B	mg/kg	0.461	0.446	< 0.42	0.42	0.503	0.429
Calcium	6010B	mg/kg	364	8.93	1700	8.41	1430	8.57
Chromium	6010B	mg/kg	18.5	2.68	23.4	2.52	39.6	2.57
Cobalt	6010B	mg/kg	5.45	0.893	2.47	0.841	11.9	0.857
Copper	6010B	mg/kg	19.3	0.893	12	0.841	19.2	0.857
Iron	6010B	mg/kg	42900 B	268	23800	2.52	42800	51.4
Lead	6010B	mg/kg	16.6	0.893	16.9	0.841	17.8	0.857
Magnesium	6010B	mg/kg	793	22.3	1040	21	979	21.4
Manganese	6010B	mg/kg	201	0.446	270	0.42	903	8.57
Mercury	7471A	mg/kg	< 0.291	0.291	< 0.27	0.27	< 0.286	0.286
Nickel	6010B	mg/kg	7.22	1.79	7.57	1.68	8.08	1.71
Potassium	6010B	mg/kg	694	44.6	1330	42	1560	42.9
Selenium	6020	mg/kg	0.298	0.234	0.304	0.219	0.403	0.23
Silver	6010B	mg/kg	< 1.79	1.79	< 1.68	1.68	< 1.71	1.71
Sodium	6010B	mg/kg	< 22.3	22.3	31.9	21	36.9	21.4
Thallium	6010B	mg/kg	< 22.3	22.3	< 21	21	< 21.4	21.4
Tin	6010B	mg/kg	< 22.3	22.3	< 21	21	< 21.4	21.4
Vanadium	6010B	mg/kg	39	0.446	37.6	0.42	42.9	0.429
Zinc	6010B	mg/kg	26.2	0.893	31.3	0.841	28.1	0.857
Misc Analyses								
Ammonia	350.1	mg/kg	< 5.85	5.85	9.74	5.44	11.2	5.81
Ammonia, Extractable	350.1	mg/kg	< 1.18	1.18	3.94	1.1	8.36	1.17
pH	9045D	SU	5.12	--	5.56	--	6.16	--

2009
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**HH1**		**L3A**		**N2A**	
Sample Date			**08/28/09**		**08/28/09**		**08/28/09**	
Sample Time			**15:30**		**12:15**		**12:45**	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
1,2-Dichlorobenzene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
1,3-Dichlorobenzene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
1,4-Dichlorobenzene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
2,4,5-Trichlorophenol	8270C	ug/kg	< 216	216	< 224	224	< 207	207
2,4,6-Trichlorophenol	8270C	ug/kg	< 216	216	< 224	224	< 207	207
2,4-Dichlorophenol	8270C	ug/kg	< 216	216	< 224	224	< 207	207
2,4-Dimethylphenol	8270C	ug/kg	< 216	216	< 224	224	< 207	207
2,4-Dinitrophenol	8270C	ug/kg	< 216	216	< 224	224	< 207	207
2,4-Dinitrotoluene	8270C	ug/kg	< 1080	1080	< 1120	1120	< 1040	1040
2,6-Dinitrotoluene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
2-Chloronaphthalene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
2-Chlorophenol	8270C	ug/kg	< 216	216	< 224	224	< 207	207
2-Methylnaphthalene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
2-Methylphenol	8270C	ug/kg	< 216	216	< 224	224	< 207	207
2-Nitroaniline	8270C	ug/kg	< 216	216	< 224	224	< 207	207
2-Nitrophenol	8270C	ug/kg	< 1080	1080	< 1120	1120	< 1040	1040
3,3'-Dichlorobenzidine	8270C	ug/kg	< 216	216	< 224	224	< 207	207
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 432	432	< 448	448	< 415	415
3+4-Methylphenols	8270C	ug/kg	< 216	216	< 224	224	< 207	207
3-Nitroaniline	8270C	ug/kg	< 216	216	< 224	224	< 207	207
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 1080	1080	< 1120	1120	< 1040	1040
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 1080	1080	< 1120	1120	< 1040	1040
4-Chloro-3-Methylphenol	8270C	ug/kg	< 216	216	< 224	224	< 207	207
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 216	216	< 224	224	< 207	207
4-Nitrophenol	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Acenaphthene	8270C	ug/kg	< 1080	1080	< 1120	1120	< 1040	1040
Acenaphthylene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Anthracene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Benzo (a) Anthracene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Benzo (a) Pyrene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Benzo (b) Fluoranthene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Benzo (g,h,i) Perylene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Benzo (k) Fluoranthene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Benzoic Acid	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Benzyl Alcohol	8270C	ug/kg	< 6550	6550	< 6790	6790	< 6280	6280
Benzyl Butyl Phthalate	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Chrysene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Dibenzofuran	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Diethyl Phthalate	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Dimethyl Phthalate	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Di-n-Butylphthalate	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Di-n-Octyl Phthalate	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Fluoranthene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Fluorene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Hexachlorobenzene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Hexachlorobutadiene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Hexachlorocyclopentadiene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Hexachloroethane	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Naphthalene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Nitrobenzene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 216	216	< 224	224	< 207	207
N-Nitrosodiphenylamine	8270C	ug/kg	< 216	216	< 224	224	< 207	207
P-Chloroaniline	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Pentachlorophenol	8270C	ug/kg	< 1080	1080	< 1120	1120	< 1040	1040
Phenanthrene	8270C	ug/kg	< 216	216	< 224	224	< 207	207
Phenol	8270C	ug/kg	< 216	216	< 224	224	< 207	207
P-Nitroaniline	8270C	ug/kg	< 1080	1080	< 1120	1120	< 1040	1040
Pyrene	8270C	ug/kg	< 216	216	< 224	224	< 207	207

2009
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			HH1		L3A		N2A	
Sample Date			08/28/09		08/28/09		08/28/09	
Sample Time			15:30		12:15		12:45	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	82.6	3.39	< 3.5	3.5	< 3.45	3.45
Arsenic	6020	mg/kg	0.996	0.34	1.83	0.338	3.48	0.352
Barium	6010B	mg/kg	27.6	0.423	90.6	0.439	51.5	0.419
Beryllium	6010B	mg/kg	< 0.423	0.423	0.783	0.439	0.713	0.419
Cadmium	6010B	mg/kg	< 0.423	0.423	< 0.439	0.439	< 0.419	0.419
Calcium	6010B	mg/kg	265	8.45	1720	8.79	1130	8.38
Chromium	6010B	mg/kg	15.3	2.54	28.3	2.64	30.6	2.51
Cobalt	6010B	mg/kg	< 0.845	0.845	8.71	0.879	5.48	0.838
Copper	6010B	mg/kg	6.37	0.845	27.3	0.879	28.1	0.838
Iron	6010B	mg/kg	20200 B	2.54	29300	2.64	47400	251
Lead	6010B	mg/kg	10.7	0.845	15.9	0.879	17.4	0.838
Magnesium	6010B	mg/kg	216	21.1	1360	22	877	20.9
Manganese	6010B	mg/kg	251	0.423	117	0.439	121	0.419
Mercury	7471A	mg/kg	< 0.286	0.286	< 0.29	0.29	< 0.287	0.287
Nickel	6010B	mg/kg	2.76	1.69	9.26	1.76	7.55	1.68
Potassium	6010B	mg/kg	326	42.3	2260	43.9	1110	41.9
Selenium	6020	mg/kg	0.343	0.227	0.285	0.225	0.319	0.235
Silver	6010B	mg/kg	< 1.69	1.69	< 1.76	1.76	< 1.68	1.68
Sodium	6010B	mg/kg	< 21.1	21.1	31.2	22	44.1	20.9
Thallium	6010B	mg/kg	< 21.1	21.1	< 22	22	< 20.9	20.9
Tin	6010B	mg/kg	< 21.1	21.1	< 22	22	< 20.9	20.9
Vanadium	6010B	mg/kg	26	0.423	36.1	0.439	47.2	0.419
Zinc	6010B	mg/kg	16.1	0.845	30.3	0.879	28.3	0.838
Misc Analyses								
Ammonia	350.1	mg/kg	6.73	5.61	6.91	5.88	10.5	5.81
Ammonia, Extractable	350.1	mg/kg	2.52	1.13	< 1.17	1.17	< 1.15	1.15
pH	9045D	SU	5.17	--	6.66	--	6.31	--

2009
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID Sample Date Sample Time			P4A 08/28/09 13:30		S4A 08/28/09 14:00		U1A 08/28/09 14:30	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
1,2-Dichlorobenzene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
1,3-Dichlorobenzene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
1,4-Dichlorobenzene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
2,4,5-Trichlorophenol	8270C	ug/kg	< 211	211	< 209	209	< 193	193
2,4,6-Trichlorophenol	8270C	ug/kg	< 211	211	< 209	209	< 193	193
2,4-Dichlorophenol	8270C	ug/kg	< 211	211	< 209	209	< 193	193
2,4-Dimethylphenol	8270C	ug/kg	< 211	211	< 209	209	< 193	193
2,4-Dinitrophenol	8270C	ug/kg	< 211	211	< 209	209	< 193	193
2,4-Dinitrotoluene	8270C	ug/kg	< 1050	1050	< 1050	1050	< 967	967
2,6-Dinitrotoluene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
2-Chloronaphthalene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
2-Chlorophenol	8270C	ug/kg	< 211	211	< 209	209	< 193	193
2-Methylnaphthalene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
2-Methylphenol	8270C	ug/kg	< 211	211	< 209	209	< 193	193
2-Nitroaniline	8270C	ug/kg	< 211	211	< 209	209	< 193	193
2-Nitrophenol	8270C	ug/kg	< 1050	1050	< 1050	1050	< 967	967
3,3'-Dichlorobenzidine	8270C	ug/kg	< 211	211	< 209	209	< 193	193
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 421	421	< 418	418	< 387	387
3+4-Methylphenols	8270C	ug/kg	< 211	211	< 209	209	< 193	193
3-Nitroaniline	8270C	ug/kg	< 211	211	< 209	209	< 193	193
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 1050	1050	< 1050	1050	< 967	967
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 1050	1050	< 1050	1050	< 967	967
4-Chloro-3-Methylphenol	8270C	ug/kg	< 211	211	< 209	209	< 193	193
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 211	211	< 209	209	< 193	193
4-Nitrophenol	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Acenaphthene	8270C	ug/kg	< 1050	1050	< 1050	1050	< 967	967
Acenaphthylene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Anthracene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Benzo (a) Anthracene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Benzo (a) Pyrene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Benzo (b) Fluoranthene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Benzo (g,h,i) Perylene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Benzo (k) Fluoranthene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Benzoic Acid	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Benzyl Alcohol	8270C	ug/kg	< 6380	6380	< 6340	6340	< 5860	5860
Benzyl Butyl Phthalate	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Chrysene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Dibenzofuran	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Diethyl Phthalate	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Dimethyl Phthalate	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Di-n-Butylphthalate	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Di-n-Octyl Phthalate	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Fluoranthene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Fluorene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Hexachlorobenzene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Hexachlorobutadiene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Hexachlorocyclopentadiene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Hexachloroethane	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Naphthalene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Nitrobenzene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 211	211	< 209	209	< 193	193
N-Nitrosodiphenylamine	8270C	ug/kg	< 211	211	< 209	209	< 193	193
P-Chloroaniline	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Pentachlorophenol	8270C	ug/kg	< 1050	1050	< 1050	1050	< 967	967
Phenanthrene	8270C	ug/kg	< 211	211	< 209	209	< 193	193
Phenol	8270C	ug/kg	< 211	211	< 209	209	< 193	193
P-Nitroaniline	8270C	ug/kg	< 1050	1050	< 1050	1050	< 967	967
Pyrene	8270C	ug/kg	< 211	211	< 209	209	< 193	193

2009
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			P4A		S4A		U1A	
Sample Date			08/28/09		08/28/09		08/28/09	
Sample Time			13:30		14:00		14:30	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	< 3.59	3.59	< 3.48	3.48	< 3.46	3.46
Arsenic	6020	mg/kg	3.49	0.353	2.32	0.349	1.43	0.334
Barium	6010B	mg/kg	68.2	0.456	61.3	0.434	30.8	0.409
Beryllium	6010B	mg/kg	0.534	0.456	< 0.434	0.434	0.419	0.409
Cadmium	6010B	mg/kg	< 0.456	0.456	< 0.434	0.434	0.441	0.409
Calcium	6010B	mg/kg	1560	9.12	1490	8.67	986	8.17
Chromium	6010B	mg/kg	32.1	2.74	18.1	2.6	24.2	2.45
Cobalt	6010B	mg/kg	1.79	0.912	< 0.867	0.867	4.28	0.817
Copper	6010B	mg/kg	14.2	0.912	6.44	0.867	20.6	0.817
Iron	6010B	mg/kg	30500	2.74	19700 B	2.6	47300 B	245
Lead	6010B	mg/kg	18.4	0.912	15.2	0.867	13.6	0.817
Magnesium	6010B	mg/kg	909	22.8	439	21.7	387	20.4
Manganese	6010B	mg/kg	115	0.456	112	0.434	144	0.409
Mercury	7471A	mg/kg	< 0.297	0.297	< 0.285	0.285	< 0.284	0.284
Nickel	6010B	mg/kg	6.98	1.82	3.89	1.73	4.69	1.63
Potassium	6010B	mg/kg	1180	45.6	405	43.4	444	40.9
Selenium	6020	mg/kg	0.397	0.235	0.321	0.233	< 0.223	0.223
Silver	6010B	mg/kg	< 1.82	1.82	< 1.73	1.73	< 1.63	1.63
Sodium	6010B	mg/kg	38.9	22.8	< 21.7	21.7	< 20.4	20.4
Thallium	6010B	mg/kg	< 22.8	22.8	< 21.7	21.7	< 20.4	20.4
Tin	6010B	mg/kg	< 22.8	22.8	< 21.7	21.7	< 20.4	20.4
Vanadium	6010B	mg/kg	37.5	0.456	28.2	0.434	37.6	0.409
Zinc	6010B	mg/kg	32.3	0.912	14.8	0.867	19.3	0.817
Misc Analyses								
Ammonia	350.1	mg/kg	11	5.86	11.6	5.74	14	5.67
Ammonia, Extractable	350.1	mg/kg	< 1.2	1.2	17.4	1.16	4.37	1.15
pH	9045D	SU	6.2	--	5.93	--	5.58	--

2009
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID Sample Date Sample Time			Y4A 08/28/09 14:45		Z2A 08/28/09 15:15	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 207	207	< 195	195
1,2-Dichlorobenzene	8270C	ug/kg	< 207	207	< 195	195
1,3-Dichlorobenzene	8270C	ug/kg	< 207	207	< 195	195
1,4-Dichlorobenzene	8270C	ug/kg	< 207	207	< 195	195
2,4,5-Trichlorophenol	8270C	ug/kg	< 207	207	< 195	195
2,4,6-Trichlorophenol	8270C	ug/kg	< 207	207	< 195	195
2,4-Dichlorophenol	8270C	ug/kg	< 207	207	< 195	195
2,4-Dimethylphenol	8270C	ug/kg	< 207	207	< 195	195
2,4-Dinitrophenol	8270C	ug/kg	< 207	207	< 195	195
2,4-Dinitrotoluene	8270C	ug/kg	< 1040	1040	< 976	976
2,6-Dinitrotoluene	8270C	ug/kg	< 207	207	< 195	195
2-Chloronaphthalene	8270C	ug/kg	< 207	207	< 195	195
2-Chlorophenol	8270C	ug/kg	< 207	207	< 195	195
2-Methylnaphthalene	8270C	ug/kg	< 207	207	< 195	195
2-Methylphenol	8270C	ug/kg	< 207	207	< 195	195
2-Nitroaniline	8270C	ug/kg	< 207	207	< 195	195
2-Nitrophenol	8270C	ug/kg	< 1040	1040	< 976	976
3,3'-Dichlorobenzidine	8270C	ug/kg	< 207	207	< 195	195
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 414	414	< 390	390
3+4-Methylphenols	8270C	ug/kg	< 207	207	< 195	195
3-Nitroaniline	8270C	ug/kg	< 207	207	< 195	195
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 1040	1040	< 976	976
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 1040	1040	< 976	976
4-Chloro-3-Methylphenol	8270C	ug/kg	< 207	207	< 195	195
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 207	207	< 195	195
4-Nitrophenol	8270C	ug/kg	< 207	207	< 195	195
Acenaphthene	8270C	ug/kg	< 1040	1040	< 976	976
Acenaphthylene	8270C	ug/kg	< 207	207	< 195	195
Anthracene	8270C	ug/kg	< 207	207	< 195	195
Benzo (a) Anthracene	8270C	ug/kg	< 207	207	< 195	195
Benzo (a) Pyrene	8270C	ug/kg	< 207	207	< 195	195
Benzo (b) Fluoranthene	8270C	ug/kg	< 207	207	< 195	195
Benzo (g,h,i) Perylene	8270C	ug/kg	< 207	207	< 195	195
Benzo (k) Fluoranthene	8270C	ug/kg	< 207	207	< 195	195
Benzoic Acid	8270C	ug/kg	< 207	207	< 195	195
Benzyl Alcohol	8270C	ug/kg	< 6280	6280	< 5910	5910
Benzyl Butyl Phthalate	8270C	ug/kg	< 207	207	< 195	195
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 207	207	< 195	195
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 207	207	< 195	195
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 207	207	< 195	195
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 207	207	< 195	195
Chrysene	8270C	ug/kg	< 207	207	< 195	195
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 207	207	< 195	195
Dibenzofuran	8270C	ug/kg	< 207	207	< 195	195
Diethyl Phthalate	8270C	ug/kg	< 207	207	< 195	195
Dimethyl Phthalate	8270C	ug/kg	< 207	207	< 195	195
Di-n-Butylphthalate	8270C	ug/kg	< 207	207	< 195	195
Di-n-Octyl Phthalate	8270C	ug/kg	< 207	207	< 195	195
Fluoranthene	8270C	ug/kg	< 207	207	< 195	195
Fluorene	8270C	ug/kg	< 207	207	< 195	195
Hexachlorobenzene	8270C	ug/kg	< 207	207	< 195	195
Hexachlorobutadiene	8270C	ug/kg	< 207	207	< 195	195
Hexachlorocyclopentadiene	8270C	ug/kg	< 207	207	< 195	195
Hexachloroethane	8270C	ug/kg	< 207	207	< 195	195
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 207	207	< 195	195
Naphthalene	8270C	ug/kg	< 207	207	< 195	195
Nitrobenzene	8270C	ug/kg	< 207	207	< 195	195
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 207	207	< 195	195
N-Nitrosodiphenylamine	8270C	ug/kg	< 207	207	< 195	195
P-Chloroaniline	8270C	ug/kg	< 207	207	< 195	195
Pentachlorophenol	8270C	ug/kg	< 1040	1040	< 976	976
Phenanthrene	8270C	ug/kg	< 207	207	< 195	195
Phenol	8270C	ug/kg	< 207	207	< 195	195
P-Nitroaniline	8270C	ug/kg	< 1040	1040	< 976	976
Pyrene	8270C	ug/kg	< 207	207	< 195	195

2009
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			Y4A		Z2A	
Sample Date			08/28/09		08/28/09	
Sample Time			14:45		15:15	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	109	3.34	< 3.37	3.37
Arsenic	6020	mg/kg	1.51	0.315	3	0.326
Barium	6010B	mg/kg	31.9	0.397	58.7	0.429
Beryllium	6010B	mg/kg	< 0.397	0.397	< 0.429	0.429
Cadmium	6010B	mg/kg	< 0.397	0.397	< 0.429	0.429
Calcium	6010B	mg/kg	282	7.94	996	8.58
Chromium	6010B	mg/kg	9.57	2.38	22	2.58
Cobalt	6010B	mg/kg	1.67	0.794	1.32	0.858
Copper	6010B	mg/kg	8.05	0.794	8.77	0.858
Iron	6010B	mg/kg	14400 B	2.38	26400 B	2.58
Lead	6010B	mg/kg	8.59	0.794	16.8	0.858
Magnesium	6010B	mg/kg	204	19.8	505	21.5
Manganese	6010B	mg/kg	162	0.397	136	0.429
Mercury	7471A	mg/kg	< 0.274	0.274	< 0.275	0.275
Nickel	6010B	mg/kg	4.84	1.59	4.34	1.72
Potassium	6010B	mg/kg	334	39.7	489	42.9
Selenium	6020	mg/kg	0.296	0.21	0.294	0.217
Silver	6010B	mg/kg	< 1.59	1.59	< 1.72	1.72
Sodium	6010B	mg/kg	< 19.8	19.8	< 21.5	21.5
Thallium	6010B	mg/kg	< 19.8	19.8	< 21.5	21.5
Tin	6010B	mg/kg	< 19.8	19.8	< 21.5	21.5
Vanadium	6010B	mg/kg	17.3	0.397	32.8	0.429
Zinc	6010B	mg/kg	13.2	0.794	19.3	0.858
Misc Analyses						
Ammonia	350.1	mg/kg	17.9	5.47	12.9	5.56
Ammonia, Extractable	350.1	mg/kg	9.38	1.11	5.53	1.12
pH	9045D	SU	4.95	--	5.76	--

Note: Soil samples collected from surface soil
Sample IDs denoted with "B" are duplicate samples of original "A" sample
-- = Not Applicable
mg/kg = milligrams per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit
B = analyte present in method blank

2010
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**AA1**		**B4A**		**DD1**	
Sample Date			**08/19/10**		**08/19/10**		**08/19/10**	
Sample Time			**14:00**		**7:30**		**14:15**	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
1,2-Dichlorobenzene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
1,3-Dichlorobenzene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
1,4-Dichlorobenzene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
2,4,5-Trichlorophenol	8270C	ug/kg	< 201	201	< 199	199	< 196	196
2,4,6-Trichlorophenol	8270C	ug/kg	< 201	201	< 199	199	< 196	196
2,4-Dichlorophenol	8270C	ug/kg	< 201	201	< 199	199	< 196	196
2,4-Dimethylphenol	8270C	ug/kg	< 201	201	< 199	199	< 196	196
2,4-Dinitrophenol	8270C	ug/kg	< 1000	1000	< 997	997	< 982	982
2,4-Dinitrotoluene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
2,6-Dinitrotoluene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
2-Chloronaphthalene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
2-Chlorophenol	8270C	ug/kg	< 201	201	< 199	199	< 196	196
2-Methylnaphthalene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
2-Methylphenol	8270C	ug/kg	< 201	201	< 199	199	< 196	196
2-Nitroaniline	8270C	ug/kg	< 1000	1000	< 997	997	< 982	982
2-Nitrophenol	8270C	ug/kg	< 201	201	< 199	199	< 196	196
3,3'-Dichlorobenzidine	8270C	ug/kg	< 401	401	< 399	399	< 393	393
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 201	201	< 199	199	< 196	196
3+4-Methylphenols	8270C	ug/kg	< 201	201	< 199	199	< 196	196
3-Nitroaniline	8270C	ug/kg	< 1000	1000	< 997	997	< 982	982
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 1000	1000	< 997	997	< 982	982
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 201	201	< 199	199	< 196	196
4-Chloro-3-Methylphenol	8270C	ug/kg	< 201	201	< 199	199	< 196	196
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 201	201	< 199	199	< 196	196
4-Nitroaniline	8270C	ug/kg	< 1000	1000	< 997	997	< 982	982
4-Nitrophenol	8270C	ug/kg	< 1000	1000	< 997	997	< 982	982
Acenaphthene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Acenaphthylene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Anthracene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Benzo (a) Anthracene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Benzo (a) Pyrene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Benzo (b) Fluoranthene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Benzo (g,h,i) Perylene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Benzo (k) Fluoranthene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Benzoic Acid	8270C	ug/kg	< 6080	6080	< 6040	6040	< 5950	5950
Benzyl Alcohol	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Benzyl Butyl Phthalate	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Chrysene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Dibenzofuran	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Diethyl Phthalate	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Dimethyl Phthalate	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Di-n-Butylphthalate	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Di-n-Octyl Phthalate	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Fluoranthene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Fluorene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Hexachlorobenzene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Hexachlorobutadiene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Hexachlorocyclopentadiene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Hexachloroethane	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Naphthalene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Nitrobenzene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 201	201	< 199	199	< 196	196
N-Nitrosodiphenylamine	8270C	ug/kg	< 201	201	< 199	199	< 196	196
P-Chloroaniline	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Pentachlorophenol	8270C	ug/kg	< 1000	1000	< 997	997	< 982	982
Phenanthrene	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Phenol	8270C	ug/kg	< 201	201	< 199	199	< 196	196
Pyrene	8270C	ug/kg	< 201	201	< 199	199	< 196	196

2010
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**AA1**		**B4A**		**DD1**	
Sample Date			**08/19/10**		**08/19/10**		**08/19/10**	
Sample Time			**14:00**		**7:30**		**14:15**	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	83.8	3.73	< 3.57	3.57	42.0	3.60
Arsenic	6020	mg/kg	3.17	1.83	< 1.77	1.77	2.30	1.67
Barium	6010B	mg/kg	44.3	0.458	75.9	0.459	58.3	0.447
Beryllium	6010B	mg/kg	< 0.458	0.458	< 0.459	0.459	< 0.447	0.447
Cadmium	6010B	mg/kg	< 0.458	0.458	< 0.459	0.459	< 0.447	0.447
Calcium	6010B	mg/kg	222	9.16	1,730	9.18	302	8.94
Chromium	6010B	mg/kg	14.3	2.75	18.9	2.75	13.9	2.68
Cobalt	6010B	mg/kg	2.38	0.916	1.83	0.918	1.95	0.894
Copper	6010B	mg/kg	8.85	0.916	6.78	0.918	7.06	0.894
Iron	6010B	mg/kg	17,500	2.75	17,800	2.75	15,700	2.68
Lead	6010B	mg/kg	17.8	0.916	14.8	0.918	13.5	0.894
Magnesium	6010B	mg/kg	273	22.9	443	23.0	355	22.3
Manganese	6010B	mg/kg	181	0.458	228	0.459	106	0.447
Mercury	7471A	mg/kg	< 0.299	0.299	< 0.304	0.304	< 0.284	0.284
Nickel	6010B	mg/kg	4.54	1.83	4.94	1.84	4.31	1.79
Potassium	6010B	mg/kg	337	45.8	710	45.9	242	44.7
Selenium	6020	mg/kg	< 1.22	1.22	< 1.18	1.18	< 1.12	1.12
Silver	6010B	mg/kg	< 1.83	1.83	< 1.84	1.84	< 1.79	1.79
Sodium	6010B	mg/kg	< 22.9	22.9	< 23	23.0	< 22.3	22.3
Thallium	6010B	mg/kg	< 22.9	22.9	< 23	23.0	< 22.3	22.3
Tin	6010B	mg/kg	< 22.9	22.9	< 23	23.0	< 22.3	22.3
Vanadium	6010B	mg/kg	21.7	0.458	24.8	0.459	25.1	0.447
Zinc	6010B	mg/kg	13.2	0.916	14.5	0.918	14.2	0.894
Misc Analyses								
Ammonia	350.1	mg/kg	16.4	6.17	18.4	5.94	11.2	6.02
Ammonia, Extractable	350.1	mg/kg	4.84	1.25	2.43	1.22	2.99	1.22
pH	9045D	SU	4.12	--	5.75	--	4.10	--

Note: Soil samples collected from surface soil
-- = Not Applicable
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified laboratory reporting limit

Sample ID			EE1		F1A		H2A	
Sample Date			08/19/10		08/19/10		08/19/10	
Sample Time			13:45		7:45		9:30	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
1,2-Dichlorobenzene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
1,3-Dichlorobenzene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
1,4-Dichlorobenzene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
2,4,5-Trichlorophenol	8270C	ug/kg	< 195	195	< 192	192	< 200	200
2,4,6-Trichlorophenol	8270C	ug/kg	< 195	195	< 192	192	< 200	200
2,4-Dichlorophenol	8270C	ug/kg	< 195	195	< 192	192	< 200	200
2,4-Dimethylphenol	8270C	ug/kg	< 195	195	< 192	192	< 200	200
2,4-Dinitrophenol	8270C	ug/kg	< 977	977	< 961	961	< 1000	1000
2,4-Dinitrotoluene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
2,6-Dinitrotoluene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
2-Chloronaphthalene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
2-Chlorophenol	8270C	ug/kg	< 195	195	< 192	192	< 200	200
2-Methylnaphthalene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
2-Methylphenol	8270C	ug/kg	< 195	195	< 192	192	< 200	200
2-Nitroaniline	8270C	ug/kg	< 977	977	< 961	961	< 1000	1000
2-Nitrophenol	8270C	ug/kg	< 195	195	< 192	192	< 200	200
3,3'-Dichlorobenzidine	8270C	ug/kg	< 391	391	< 384	384	< 401	401
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 195	195	< 192	192	< 200	200
3+4-Methylphenols	8270C	ug/kg	< 195	195	< 192	192	< 200	200
3-Nitroaniline	8270C	ug/kg	< 977	977	< 961	961	< 1000	1000
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 977	977	< 961	961	< 1000	1000
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 195	195	< 192	192	< 200	200
4-Chloro-3-Methylphenol	8270C	ug/kg	< 195	195	< 192	192	< 200	200
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 195	195	< 192	192	< 200	200
4-Nitroaniline	8270C	ug/kg	< 977	977	< 961	961	< 1000	1000
4-Nitrophenol	8270C	ug/kg	< 977	977	< 961	961	< 1000	1000
Acenaphthene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Acenaphthylene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Anthracene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Benzo (a) Anthracene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Benzo (a) Pyrene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Benzo (b) Fluoranthene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Benzo (g,h,i) Perylene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Benzo (k) Fluoranthene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Benzoic Acid	8270C	ug/kg	< 5920	5920	< 5820	5820	< 6070	6070
Benzyl Alcohol	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Benzyl Butyl Phthalate	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Chrysene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Dibenzofuran	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Diethyl Phthalate	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Dimethyl Phthalate	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Di-n-Butylphthalate	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Di-n-Octyl Phthalate	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Fluoranthene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Fluorene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Hexachlorobenzene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Hexachlorobutadiene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Hexachlorocyclopentadiene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Hexachloroethane	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Naphthalene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Nitrobenzene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 195	195	< 192	192	< 200	200
N-Nitrosodiphenylamine	8270C	ug/kg	< 195	195	< 192	192	< 200	200
P-Chloroaniline	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Pentachlorophenol	8270C	ug/kg	< 977	977	< 961	961	< 1000	1000
Phenanthrene	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Phenol	8270C	ug/kg	< 195	195	< 192	192	< 200	200
Pyrene	8270C	ug/kg	< 195	195	< 192	192	< 200	200

2010
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			EE1		F1A		H2A	
Sample Date			08/19/10		08/19/10		08/19/10	
Sample Time			13:45		7:45		9:30	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	285	3.59	< 3.45	3.45	< 3.67	3.67
Arsenic	6020	mg/kg	2.34	1.67	2.54	1.67	2.39	1.79
Barium	6010B	mg/kg	47.1	0.413	65.2	0.438	101	0.449
Beryllium	6010B	mg/kg	0.531	0.413	< 0.438	0.438	0.470	0.449
Cadmium	6010B	mg/kg	< 0.413	0.413	< 0.438	0.438	< 0.449	0.449
Calcium	6010B	mg/kg	315	8.27	1,130	8.75	1,270	8.97
Chromium	6010B	mg/kg	15.9	2.48	13.7	2.63	11.0	2.69
Cobalt	6010B	mg/kg	7.41	0.827	2.34	0.875	12.6	0.897
Copper	6010B	mg/kg	19.2	0.827	9.26	0.875	19.8	0.897
Iron	6010B	mg/kg	34,400	2.48	20,200	2.63	30,100	2.69
Lead	6010B	mg/kg	17.2	0.827	14.5	0.875	15.7	0.897
Magnesium	6010B	mg/kg	635	20.7	380	21.9	485	22.4
Manganese	6010B	mg/kg	552	0.413	231	0.438	711	0.449
Mercury	7471A	mg/kg	< 0.298	0.298	< 0.291	0.291	< 0.312	0.312
Nickel	6010B	mg/kg	6.49	1.65	3.87	1.75	5.70	1.79
Potassium	6010B	mg/kg	801	41.3	466	43.8	746	44.9
Selenium	6020	mg/kg	< 1.12	1.12	< 1.11	1.11	< 1.19	1.19
Silver	6010B	mg/kg	< 1.65	1.65	< 1.75	1.75	< 1.79	1.79
Sodium	6010B	mg/kg	< 20.7	20.7	< 21.9	21.9	< 22.4	22.4
Thallium	6010B	mg/kg	< 20.7	20.7	< 21.9	21.9	< 22.4	22.4
Tin	6010B	mg/kg	< 20.7	20.7	< 21.9	21.9	< 22.4	22.4
Vanadium	6010B	mg/kg	36.0	0.413	24.2	0.438	25.0	0.449
Zinc	6010B	mg/kg	21.6	0.827	14.1	0.875	20.0	0.897
Misc Analyses								
Ammonia	350.1	mg/kg	7.55	6.06	15.8	5.77	13.6	6.25
Ammonia, Extractable	350.1	mg/kg	1.49	1.22	< 1.17	1.17	1.94	1.25
pH	9045D	SU	4.71	--	4.94	--	5.46	--

Note: Soil samples collected from surface soil
-- = Not Applicable
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified
laboratory reporting limit

2010
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			HH1		L3A		N2A	
Sample Date			08/19/10		08/19/10		08/19/10	
Sample Time			13:30		10:30		10:45	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
1,2-Dichlorobenzene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
1,3-Dichlorobenzene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
1,4-Dichlorobenzene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
2,4,5-Trichlorophenol	8270C	ug/kg	< 196	196	< 203	203	< 195	195
2,4,6-Trichlorophenol	8270C	ug/kg	< 196	196	< 203	203	< 195	195
2,4-Dichlorophenol	8270C	ug/kg	< 196	196	< 203	203	< 195	195
2,4-Dimethylphenol	8270C	ug/kg	< 196	196	< 203	203	< 195	195
2,4-Dinitrophenol	8270C	ug/kg	< 978	978	< 1010	1010	< 974	974
2,4-Dinitrotoluene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
2,6-Dinitrotoluene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
2-Chloronaphthalene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
2-Chlorophenol	8270C	ug/kg	< 196	196	< 203	203	< 195	195
2-Methylnaphthalene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
2-Methylphenol	8270C	ug/kg	< 196	196	< 203	203	< 195	195
2-Nitroaniline	8270C	ug/kg	< 978	978	< 1010	1010	< 974	974
2-Nitrophenol	8270C	ug/kg	< 196	196	< 203	203	< 195	195
3,3'-Dichlorobenzidine	8270C	ug/kg	< 391	391	< 406	406	< 389	389
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 196	196	< 203	203	< 195	195
3+4-Methylphenols	8270C	ug/kg	< 196	196	< 203	203	< 195	195
3-Nitroaniline	8270C	ug/kg	< 978	978	< 1010	1010	< 974	974
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 978	978	< 1010	1010	< 974	974
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 196	196	< 203	203	< 195	195
4-Chloro-3-Methylphenol	8270C	ug/kg	< 196	196	< 203	203	< 195	195
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 196	196	< 203	203	< 195	195
4-Nitroaniline	8270C	ug/kg	< 978	978	< 1010	1010	< 974	974
4-Nitrophenol	8270C	ug/kg	< 978	978	< 1010	1010	< 974	974
Acenaphthene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Acenaphthylene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Anthracene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Benzo (a) Anthracene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Benzo (a) Pyrene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Benzo (b) Fluoranthene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Benzo (g,h,i) Perylene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Benzo (k) Fluoranthene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Benzoic Acid	8270C	ug/kg	< 5920	5920	< 6150	6150	< 5900	5900
Benzyl Alcohol	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Benzyl Butyl Phthalate	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Chrysene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Dibenzofuran	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Diethyl Phthalate	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Dimethyl Phthalate	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Di-n-Butylphthalate	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Di-n-Octyl Phthalate	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Fluoranthene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Fluorene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Hexachlorobenzene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Hexachlorobutadiene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Hexachlorocyclopentadiene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Hexachloroethane	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Naphthalene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Nitrobenzene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 196	196	< 203	203	< 195	195
N-Nitrosodiphenylamine	8270C	ug/kg	< 196	196	< 203	203	< 195	195
P-Chloroaniline	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Pentachlorophenol	8270C	ug/kg	< 978	978	< 1010	1010	< 974	974
Phenanthrene	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Phenol	8270C	ug/kg	< 196	196	< 203	203	< 195	195
Pyrene	8270C	ug/kg	< 196	196	< 203	203	< 195	195

2010
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**HH1**		**L3A**		**N2A**	
Sample Date			**08/19/10**		**08/19/10**		**08/19/10**	
Sample Time			**13:30**		**10:30**		**10:45**	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	54.4	3.57	< 3.84	3.84	< 3.59	3.59
Arsenic	6020	mg/kg	< 1.72	1.72	< 1.91	1.91	1.88	1.84
Barium	6010B	mg/kg	30.0	0.414	58.0	0.462	41.2	0.426
Beryllium	6010B	mg/kg	< 0.414	0.414	0.512	0.462	0.709	0.426
Cadmium	6010B	mg/kg	< 0.414	0.414	< 0.462	0.462	< 0.426	0.426
Calcium	6010B	mg/kg	126	8.28	1,420	9.25	911	8.53
Chromium	6010B	mg/kg	12.5	2.48	14.7	2.77	32.0	2.56
Cobalt	6010B	mg/kg	1.82	0.828	6.08	0.925	7.58	0.853
Copper	6010B	mg/kg	8.68	0.828	15.8	0.925	35.1	0.853
Iron	6010B	mg/kg	16,800	2.48	23,900	2.77	51,900	256
Lead	6010B	mg/kg	8.75	0.828	11.9	0.925	18.7	0.853
Magnesium	6010B	mg/kg	264	20.7	628	23.1	557	21.3
Manganese	6010B	mg/kg	123	0.414	100	0.462	112	0.426
Mercury	7471A	mg/kg	< 0.294	0.294	< 0.315	0.315	< 0.296	0.296
Nickel	6010B	mg/kg	3.09	1.66	5.13	1.85	5.17	1.71
Potassium	6010B	mg/kg	356	41.4	858	46.2	485	42.6
Selenium	6020	mg/kg	< 1.15	1.15	< 1.27	1.27	< 1.22	1.22
Silver	6010B	mg/kg	< 1.66	1.66	< 1.85	1.85	< 1.71	1.71
Sodium	6010B	mg/kg	< 20.7	20.7	< 23.1	23.1	< 21.3	21.3
Thallium	6010B	mg/kg	< 20.7	20.7	< 23.1	23.1	< 21.3	21.3
Tin	6010B	mg/kg	< 20.7	20.7	< 23.1	23.1	< 21.3	21.3
Vanadium	6010B	mg/kg	20.7	0.414	21.8	0.462	49.4	0.426
Zinc	6010B	mg/kg	14.1	0.828	18.1	0.925	22.2	0.853
Misc Analyses								
Ammonia	350.1	mg/kg	15.1	5.97	9.77	6.32	8.25	6.11
Ammonia, Extractable	350.1	mg/kg	1.71	1.22	< 1.28	1.28	< 1.23	1.23
pH	9045D	SU	4.50	--	5.76	--	5.22	--

Note: Soil samples collected from surface soil
-- = Not Applicable
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified
laboratory reporting limit

2010
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			P4A		S4A		U1A	
Sample Date			08/19/10		08/19/10		08/19/10	
Sample Time			11:30		12:00		12:30	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
1,2-Dichlorobenzene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
1,3-Dichlorobenzene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
1,4-Dichlorobenzene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
2,4,5-Trichlorophenol	8270C	ug/kg	< 193	193	< 194	194	< 203	203
2,4,6-Trichlorophenol	8270C	ug/kg	< 193	193	< 194	194	< 203	203
2,4-Dichlorophenol	8270C	ug/kg	< 193	193	< 194	194	< 203	203
2,4-Dimethylphenol	8270C	ug/kg	< 193	193	< 194	194	< 203	203
2,4-Dinitrophenol	8270C	ug/kg	< 963	963	< 972	972	< 1010	1010
2,4-Dinitrotoluene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
2,6-Dinitrotoluene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
2-Chloronaphthalene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
2-Chlorophenol	8270C	ug/kg	< 193	193	< 194	194	< 203	203
2-Methylnaphthalene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
2-Methylphenol	8270C	ug/kg	< 193	193	< 194	194	< 203	203
2-Nitroaniline	8270C	ug/kg	< 963	963	< 972	972	< 1010	1010
2-Nitrophenol	8270C	ug/kg	< 193	193	< 194	194	< 203	203
3,3'-Dichlorobenzidine	8270C	ug/kg	< 385	385	< 389	389	< 405	405
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 193	193	< 194	194	< 203	203
3+4-Methylphenols	8270C	ug/kg	< 193	193	< 194	194	< 203	203
3-Nitroaniline	8270C	ug/kg	< 963	963	< 972	972	< 1010	1010
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 963	963	< 972	972	< 1010	1010
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 193	193	< 194	194	< 203	203
4-Chloro-3-Methylphenol	8270C	ug/kg	< 193	193	< 194	194	< 203	203
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 193	193	< 194	194	< 203	203
4-Nitroaniline	8270C	ug/kg	< 963	963	< 972	972	< 1010	1010
4-Nitrophenol	8270C	ug/kg	< 963	963	< 972	972	< 1010	1010
Acenaphthene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Acenaphthylene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Anthracene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Benzo (a) Anthracene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Benzo (a) Pyrene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Benzo (b) Fluoranthene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Benzo (g,h,i) Perylene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Benzo (k) Fluoranthene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Benzoic Acid	8270C	ug/kg	< 5830	5830	< 5890	5890	< 6140	6140
Benzyl Alcohol	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Benzyl Butyl Phthalate	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Chrysene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Dibenzofuran	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Diethyl Phthalate	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Dimethyl Phthalate	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Di-n-Butylphthalate	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Di-n-Octyl Phthalate	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Fluoranthene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Fluorene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Hexachlorobenzene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Hexachlorobutadiene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Hexachlorocyclopentadiene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Hexachloroethane	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Naphthalene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Nitrobenzene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 193	193	< 194	194	< 203	203
N-Nitrosodiphenylamine	8270C	ug/kg	< 193	193	< 194	194	< 203	203
P-Chloroaniline	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Pentachlorophenol	8270C	ug/kg	< 963	963	< 972	972	< 1010	1010
Phenanthrene	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Phenol	8270C	ug/kg	< 193	193	< 194	194	< 203	203
Pyrene	8270C	ug/kg	< 193	193	< 194	194	< 203	203

2010
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			P4A		S4A		U1A	
Sample Date			08/19/10		08/19/10		08/19/10	
Sample Time			11:30		12:00		12:30	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	< 3.52	3.52	4.41	3.59	4.32	3.67
Arsenic	6020	mg/kg	2.58	1.78	< 1.77	1.77	3.99	1.81
Barium	6010B	mg/kg	45.6	0.412	54.2	0.455	32.4	0.424
Beryllium	6010B	mg/kg	< 0.412	0.412	< 0.455	0.455	0.453	0.424
Cadmium	6010B	mg/kg	< 0.412	0.412	< 0.455	0.455	< 0.424	0.424
Calcium	6010B	mg/kg	1,170	8.24	1,250	9.11	731	8.47
Chromium	6010B	mg/kg	19.2	2.47	13.9	2.73	28.5	2.54
Cobalt	6010B	mg/kg	1.99	0.824	1.54	0.911	5.05	0.847
Copper	6010B	mg/kg	11.8	0.824	5.57	0.911	25.4	0.847
Iron	6010B	mg/kg	25,900	2.47	17,000	2.73	28,400	254
Lead	6010B	mg/kg	13.3	0.824	12.3	0.911	16.6	0.847
Magnesium	6010B	mg/kg	454	20.6	299	22.8	383	21.2
Manganese	6010B	mg/kg	84.8	0.412	115	0.455	112	0.424
Mercury	7471A	mg/kg	< 0.288	0.288	< 0.298	0.298	< 0.308	0.308
Nickel	6010B	mg/kg	3.47	1.65	2.84	1.82	3.87	1.69
Potassium	6010B	mg/kg	397	41.2	364	45.5	451	42.4
Selenium	6020	mg/kg	< 1.19	1.19	< 1.18	1.18	< 1.20	1.20
Silver	6010B	mg/kg	< 1.65	1.65	< 1.82	1.82	< 1.69	1.69
Sodium	6010B	mg/kg	< 20.6	20.6	< 22.8	22.8	< 21.2	21.2
Thallium	6010B	mg/kg	< 20.6	20.6	< 22.8	22.8	< 21.2	21.2
Tin	6010B	mg/kg	< 20.6	20.6	< 22.8	22.8	< 21.2	21.2
Vanadium	6010B	mg/kg	28.0	0.412	24.9	0.455	41.1	0.424
Zinc	6010B	mg/kg	14.7	0.824	10.0	0.911	19.0	0.847
Misc Analyses								
Ammonia	350.1	mg/kg	12.0	5.92	17.6	6.01	16.2	6.11
Ammonia, Extractable	350.1	mg/kg	1.90	1.19	3.13	1.20	4.33	1.23
pH	9045D	SU	5.48	--	5.22	--	4.83	--

Note: Soil samples collected from surface soil
-- = Not Applicable
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SU = Standard pH Units
< = analyte not detected at or above the specified
laboratory reporting limit

2010
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID **Sample Date** **Sample Time**			**X4A** **08/19/10** **12:45**		**Z2A** **08/19/10** **13:15**	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,2,4-Trichlorobenzene	8270C	ug/kg	< 198	198	< 186	186
1,2-Dichlorobenzene	8270C	ug/kg	< 198	198	< 186	186
1,3-Dichlorobenzene	8270C	ug/kg	< 198	198	< 186	186
1,4-Dichlorobenzene	8270C	ug/kg	< 198	198	< 186	186
2,4,5-Trichlorophenol	8270C	ug/kg	< 198	198	< 186	186
2,4,6-Trichlorophenol	8270C	ug/kg	< 198	198	< 186	186
2,4-Dichlorophenol	8270C	ug/kg	< 198	198	< 186	186
2,4-Dimethylphenol	8270C	ug/kg	< 198	198	< 186	186
2,4-Dinitrophenol	8270C	ug/kg	< 988	988	< 931	931
2,4-Dinitrotoluene	8270C	ug/kg	< 198	198	< 186	186
2,6-Dinitrotoluene	8270C	ug/kg	< 198	198	< 186	186
2-Chloronaphthalene	8270C	ug/kg	< 198	198	< 186	186
2-Chlorophenol	8270C	ug/kg	< 198	198	< 186	186
2-Methylnaphthalene	8270C	ug/kg	< 198	198	< 186	186
2-Methylphenol	8270C	ug/kg	< 198	198	< 186	186
2-Nitroaniline	8270C	ug/kg	< 988	988	< 931	931
2-Nitrophenol	8270C	ug/kg	< 198	198	< 186	186
3,3'-Dichlorobenzidine	8270C	ug/kg	< 395	395	< 372	372
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/kg	< 198	198	< 186	186
3+4-Methylphenols	8270C	ug/kg	< 198	198	< 186	186
3-Nitroaniline	8270C	ug/kg	< 988	988	< 931	931
4,6-Dinitro-2-Methylphenol	8270C	ug/kg	< 988	988	< 931	931
4-Bromophenyl Phenyl Ether	8270C	ug/kg	< 198	198	< 186	186
4-Chloro-3-Methylphenol	8270C	ug/kg	< 198	198	< 186	186
4-Chlorophenyl Phenyl Ether	8270C	ug/kg	< 198	198	< 186	186
4-Nitroaniline	8270C	ug/kg	< 988	988	< 931	931
4-Nitrophenol	8270C	ug/kg	< 988	988	< 931	931
Acenaphthene	8270C	ug/kg	< 198	198	< 186	186
Acenaphthylene	8270C	ug/kg	< 198	198	< 186	186
Anthracene	8270C	ug/kg	< 198	198	< 186	186
Benzo (a) Anthracene	8270C	ug/kg	< 198	198	< 186	186
Benzo (a) Pyrene	8270C	ug/kg	< 198	198	< 186	186
Benzo (b) Fluoranthene	8270C	ug/kg	< 198	198	< 186	186
Benzo (g,h,i) Perylene	8270C	ug/kg	< 198	198	< 186	186
Benzo (k) Fluoranthene	8270C	ug/kg	< 198	198	< 186	186
Benzoic Acid	8270C	ug/kg	< 5990	5990	< 5640	5640
Benzyl Alcohol	8270C	ug/kg	< 198	198	< 186	186
Benzyl Butyl Phthalate	8270C	ug/kg	< 198	198	< 186	186
Bis (2-Chloroisopropyl) Ether	8270C	ug/kg	< 198	198	< 186	186
Bis(2-Chloroethoxy)Methane	8270C	ug/kg	< 198	198	< 186	186
Bis(2-Chloroethyl)Ether	8270C	ug/kg	< 198	198	< 186	186
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/kg	< 198	198	< 186	186
Chrysene	8270C	ug/kg	< 198	198	< 186	186
Dibenzo (a,h) Anthracene	8270C	ug/kg	< 198	198	< 186	186
Dibenzofuran	8270C	ug/kg	< 198	198	< 186	186
Diethyl Phthalate	8270C	ug/kg	< 198	198	< 186	186
Dimethyl Phthalate	8270C	ug/kg	< 198	198	< 186	186
Di-n-Butylphthalate	8270C	ug/kg	< 198	198	< 186	186
Di-n-Octyl Phthalate	8270C	ug/kg	< 198	198	< 186	186
Fluoranthene	8270C	ug/kg	< 198	198	< 186	186
Fluorene	8270C	ug/kg	< 198	198	< 186	186
Hexachlorobenzene	8270C	ug/kg	< 198	198	< 186	186
Hexachlorobutadiene	8270C	ug/kg	< 198	198	< 186	186
Hexachlorocyclopentadiene	8270C	ug/kg	< 198	198	< 186	186
Hexachloroethane	8270C	ug/kg	< 198	198	< 186	186
Indeno (1,2,3-cd) Pyrene	8270C	ug/kg	< 198	198	< 186	186
Naphthalene	8270C	ug/kg	< 198	198	< 186	186
Nitrobenzene	8270C	ug/kg	< 198	198	< 186	186
N-Nitroso-Di-N-Propylamine	8270C	ug/kg	< 198	198	< 186	186
N-Nitrosodiphenylamine	8270C	ug/kg	< 198	198	< 186	186
P-Chloroaniline	8270C	ug/kg	< 198	198	< 186	186
Pentachlorophenol	8270C	ug/kg	< 988	988	< 931	931
Phenanthrene	8270C	ug/kg	< 198	198	< 186	186
Phenol	8270C	ug/kg	< 198	198	< 186	186
Pyrene	8270C	ug/kg	< 198	198	< 186	186

2010
Soil Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			X4A		Z2A	
Sample Date			08/19/10		08/19/10	
Sample Time			12:45		13:15	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/kg	< 3.55	3.55	111	3.45
Arsenic	6020	mg/kg	< 1.70	1.70	< 1.73	1.73
Barium	6010B	mg/kg	63.7	0.411	35.2	0.387
Beryllium	6010B	mg/kg	< 0.411	0.411	< 0.387	0.387
Cadmium	6010B	mg/kg	< 0.411	0.411	< 0.387	0.387
Calcium	6010B	mg/kg	1,090	8.21	122	7.74
Chromium	6010B	mg/kg	23.2	2.46	12.4	2.32
Cobalt	6010B	mg/kg	2.63	0.821	2.76	0.774
Copper	6010B	mg/kg	11.6	0.821	10.2	0.774
Iron	6010B	mg/kg	28,100	2.46	17,200	2.32
Lead	6010B	mg/kg	15.8	0.821	9.62	0.774
Magnesium	6010B	mg/kg	444	20.5	274	19.3
Manganese	6010B	mg/kg	134	0.411	135	0.387
Mercury	7471A	mg/kg	< 0.299	0.299	< 0.287	0.287
Nickel	6010B	mg/kg	4.36	1.64	3.23	1.55
Potassium	6010B	mg/kg	461	41.1	397	38.7
Selenium	6020	mg/kg	< 1.13	1.13	< 1.15	1.15
Silver	6010B	mg/kg	< 1.64	1.64	< 1.55	1.55
Sodium	6010B	mg/kg	< 20.5	20.5	< 19.3	19.3
Thallium	6010B	mg/kg	< 20.5	20.5	< 19.3	19.3
Tin	6010B	mg/kg	< 20.5	20.5	< 19.3	19.3
Vanadium	6010B	mg/kg	34.0	0.411	20.9	0.387
Zinc	6010B	mg/kg	18.7	0.821	13.3	0.774
Misc Analyses						
Ammonia	350.1	mg/kg	27.7	5.95	9.37	5.76
Ammonia, Extractable	350.1	mg/kg	6.90	1.20	< 1.15	1.15
pH	9045D	SU	4.93	--	4.26	--

Note: Soil samples collected from surface soil
-- = Not Applicable
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
SU = Standard pH Units
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laboratory reporting limit

ATTACHMENT D

HISTORICAL GROUNDWATER MONITORING DATA 2006 - 2010

(Electronic Format Only – Refer to Attachment C)

ENVIRONMENTAL ALLIANCE

July 2006
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2B**		**MW-2D**		**MW-3A**	
Sample Date			**07/11/06**		**07/11/06**		**07/11/06**		**07/11/06**	
Sample Time			**9:00**		**9:40**		**10:30**		**12:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0347	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	5.27	3	4.65	3	< 3	3	5.8	3
Lead	7421	ug/L	2.07	2	< 2	2	< 2	2	4.05	2
Total Suspended Solids	160.2	mg/L	74	5	179	5	< 6.67	6.67	113	5
Total Organic Carbon	415.1	mg/L	2.99	0.5	2.5	0.5	1.59	0.5	1.7	0.5
Total Organic Halogens	9020B	ug/L	< 20	20	< 20	20	< 20	20	< 20	20

Sample ID			**MW-3B**		**MW-3C**		**MW-3C**		**MW-4A**	
Sample Date			**07/11/06**		**07/11/06**		**07/11/06**		**07/12/06**	
Sample Time			**13:05**		**13:50**		**14:00**		**8:20**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	7.06	3	5.87	3	6.15	3	< 3	3
Lead	7421	ug/L	5.82	2	7.1	2	3.13	2	< 2	2
Total Suspended Solids	160.2	mg/L	233	5	143	5	150	5	28	5
Total Organic Carbon	415.1	mg/L	1.47	0.5	1.28	0.5	1.2	0.5	1.56	0.5
Total Organic Halogens	9020B	ug/L	< 20	20	< 20	20	< 20	20	< 20	20

Sample ID			**MW-4B**		**MW-4C**		**MW-5A**		**OW-1A**	
Sample Date			**07/12/06**		**07/12/06**		**07/12/06**		**07/12/06**	
Sample Time			**9:00**		**9:45**		**10:50**		**12:05**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	0.25	0.03	< 0.03	0.03	0.0503	0.03
Chromium	6010B	ug/L	15.4	3	17.8	3	< 3	3	54.6	3
Lead	7421	ug/L	12.2	2	10.9	2	< 2	2	10.9	2
Total Suspended Solids	160.2	mg/L	299	5	174	5	< 5	5	726	10
Total Organic Carbon	415.1	mg/L	1.47	0.5	1.31	0.5	1.25	0.5	1.21	0.5
Total Organic Halogens	9020B	ug/L	< 20	20	< 20	20	< 20	20	< 20	20

July 2006
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**OW-1B**	
Sample Date			**07/12/06**	
Sample Time			**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03
Chromium	6010B	ug/L	21.1	3
Lead	7421	ug/L	< 2	2
Total Suspended Solids	160.2	mg/L	113	5
Total Organic Carbon	415.1	mg/L	1.54	0.5
Total Organic Halogens	9020B	ug/L	< 20	20

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

August 2006
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2E		MW-4A		MW-4A	
Sample Date			**08/22/06**		**08/22/06**		**08/22/06**		**08/22/06**	
Sample Time			**10:10**		**11:00**		**11:50**		**11:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	4.01	3	4.34	3	9.23	3	9.96	3
Lead	7421	ug/L	< 2	2	< 2	2	7.24	2	6.62	2
Total Suspended Solids	160.2	mg/L	72.5	5	39.3	6.67	93.5	5	178	5
Total Organic Carbon	415.1	mg/L	2.33	0.5	0.919	0.5	1.18	0.5	0.808	0.5

Sample ID			MW-5A		OW-1A	
Sample Date			**08/22/06**		**08/22/06**	
Sample Time			**13:20**		**14:10**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	17	3
Lead	7421	ug/L	< 2	2	4.89	2
Total Suspended Solids	160.2	mg/L	10	5	149	6.67
Total Organic Carbon	415.1	mg/L	1.06	0.5	1.14	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
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October 2006
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2D**		**MW-4A**		**MW-4C**	
Sample Date			**10/11/06**		**10/11/06**		**10/11/06**		**10/11/06**	
Sample Time			**9:00**		**10:10**		**11:15**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.037	0.03	0.0335	0.03	0.0313	0.03	0.0395	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	5.36	3	9.47	3
Lead	7421	ug/L	< 2	2	< 2	2	2.16	2	< 2	2
Total Suspended Solids	160.2	mg/L	14	5	< 5	6.67	133	5	144	5
Total Organic Carbon	415.1	mg/L	1.55	0.5	1.05	0.5	1.12	0.5	0.946	0.5

Sample ID			**MW-4C**		**MW-5A**		**OW-1A**	
Sample Date			**10/11/06**		**10/11/06**		**10/11/06**	
Sample Time			**12:10**		**13:40**		**14:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0561	0.03	0.0363	0.03	0.0418	0.03
Chromium	6010B	ug/L	14.2	3	< 3	3	8.01	3
Lead	7421	ug/L	< 2	2	< 2	2	< 2	2
Total Suspended Solids	160.2	mg/L	86.5	5	65.5	5	147	5
Total Organic Carbon	415.1	mg/L	0.978	0.5	1.03	0.5	1.34	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
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November 2006
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2B**		**MW-2E**		**MW-4B**		**MW-5A**	
Sample Date			**11/09/06**		**11/09/06**		**11/09/06**		**11/09/06**	
Sample Time			**8:30**		**10:00**		**11:30**		**12:10**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	0.0895	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	22	3	< 3	3
Lead	7421	ug/L	< 2	2	< 2	2	19	2	< 2	2
Total Suspended Solids	160.2	mg/L	< 6.67	5	13	5	59.5	5	11	5
Total Organic Carbon	415.1	mg/L	0.973	0.5	0.716	0.5	0.754	0.5	0.673	0.5

Sample ID			**MW-5A**		**OW-1B**	
Sample Date			**11/09/06**		**11/09/06**	
Sample Time			**12:15**		**13:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	4.96	3
Lead	7421	ug/L	< 2	2	< 2	2
Total Suspended Solids	160.2	mg/L	5.5	5	155	5
Total Organic Carbon	415.1	mg/L	0.705	0.5	0.753	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

December 2006
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2C**		**MW-4A**		**MW-5A**	
Sample Date			**12/19/06**		**12/19/06**		**12/19/06**		**12/19/06**	
Sample Time			**9:30**		**10:30**		**11:20**		**12:10**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	0.0375	0.03	0.0331	0.03	0.0313	0.03
Chromium	6010B	ug/L	3.57	3	3.13	3	6.55	3	5.24	3
Lead	7421	ug/L	< 2	2	< 2	2	< 2	2	< 2	2
Total Suspended Solids	160.2	mg/L	17.5	5	< 6.67	5	18.5	5	< 5	5
Total Organic Carbon	415.1	mg/L	1.03	0.5	0.995	0.5	0.647	0.5	0.505	0.5

Sample ID			**OW-1A**		**OW-1A**	
Sample Date			**12/19/06**		**12/19/06**	
Sample Time			**14:45**		**14:50**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	26.1	3	43.2	3
Lead	7421	ug/L	4.36	2	5.51	2
Total Suspended Solids	160.2	mg/L	45.5	5	53.5	5
Total Organic Carbon	415.1	mg/L	0.551	0.5	0.635	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

January 2007
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2B**		**MW-2D**		**MW-4B**		**MW-4C**	
Sample Date			**01/11/07**		**01/11/07**		**01/11/07**		**01/11/07**	
Sample Time			**9:05**		**9:50**		**11:40**		**12:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	79.7	3	10.9	3
Lead	7421	ug/L	< 2	2	< 2	2	19.7	2	< 2	2
Total Suspended Solids	160.2	mg/L	< 5	5	< 6.67	6.67	212	5	80	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			**MW-5A**		**OW-1B**		**OW-1B**	
Sample Date			**01/11/07**		**01/11/07**		**01/11/07**	
Sample Time			**13:40**		**14:30**		**14:40**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	10.8	3	8.45	3
Lead	7421	ug/L	< 2	2	< 2	2	< 2	2
Total Suspended Solids	160.2	mg/L	27.5	5	28	5	26.5	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

February 2007
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2E**		**MW-4A**		**MW-5A**	
Sample Date			**02/21/07**		**02/21/07**		**02/21/07**		**02/21/07**	
Sample Time			**9:50**		**11:00**		**12:00**		**12:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	11.8	3	5	3
Lead	7421	ug/L	< 2	2	< 2	2	< 2	2	< 2	2
Total Suspended Solids	160.2	mg/L	27	5	16	6.67	111	5	5	5
Total Organic Carbon	415.1	mg/L	4	0.5	1.28	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			**OW-1A**		**OW-1A**	
Sample Date			**02/21/07**		**02/21/07**	
Sample Time			**13:15**		**13:20**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	18.4	3	12	3
Lead	7421	ug/L	4.9	2	4.36	2
Total Suspended Solids	160.2	mg/L	86.5	5	67	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5

-- = Not Applicable
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March 2007
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2B		MW-2C		MW-4B		MW-5A	
Sample Date			**03/20/07**		**03/20/07**		**03/20/07**		**03/20/07**	
Sample Time			**9:45**		**10:45**		**13:00**		**13:40**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.267	0.03	0.28	0.03	0.268	0.03	0.301	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	23.6	3	< 3	3
Lead	7421	ug/L	< 2	2	< 2	2	14.2	2	< 2	2
Total Suspended Solids	160.2	mg/L	< 5	5	< 6.67	6.67	86.5	5	8	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			MW-5A		OW-1B	
Sample Date			**03/20/07**		**03/20/07**	
Sample Time			**13:45**		**14:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.281	0.03	0.252	0.03
Chromium	6010B	ug/L	< 3	3	7.63	3
Lead	7421	ug/L	9.58	2	< 2	2
Total Suspended Solids	160.2	mg/L	8.5	5	57.5	5
Total Organic Carbon	415.1	mg/L	0.521	0.5	0.521	0.5

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April 2007
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2D		MW-4A		MW-4C	
Sample Date			04/24/07		04/24/07		04/24/07		04/24/07	
Sample Time			9:30		10:15		11:15		12:00	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.246	0.03	0.231	0.03	0.254	0.03	0.251	0.03
Chromium	6010B	ug/L	3.25	3	< 3	3	4.96	3	11.5	3
Lead	7421	ug/L	< 2	2	< 2	2	5.37	2	< 2	2
Total Suspended Solids	160.2	mg/L	15.3	5	5	5	51.5	5	58	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	0.539	0.5	0.537	0.5	0.536	0.5

Sample ID			MW-4C		MW-5A		OW-1A	
Sample Date			04/24/07		04/24/07		04/24/07	
Sample Time			12:10		12:50		13:50	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.266	0.03	0.23	0.03	0.262	0.03
Chromium	6010B	ug/L	10.8	3	< 3	3	15.3	3
Lead	7421	ug/L	< 2	2	< 2	2	< 2	2
Total Suspended Solids	160.2	mg/L	50	5	16	5	285	5
Total Organic Carbon	415.1	mg/L	0.53	0.5	< 0.5	0.5	< 0.5	0.5

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May 2007
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2B		MW-2E		MW-4B		MW-4B	
Sample Date			**05/23/07**		**05/23/07**		**05/23/07**		**05/23/07**	
Sample Time			**9:05**		**10:00**		**10:45**		**10:50**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	26.7	3	142	3
Lead	7421	ug/L	< 2	2	< 2	2	28.6	2	164	2
Total Suspended Solids	160.2	mg/L	< 6.67	6.67	< 5	5	71	5	101	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			MW-5A		OW-1B	
Sample Date			**05/23/07**		**05/23/07**	
Sample Time			**11:25**		**13:50**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	10.5	3	7.53	3
Lead	7421	ug/L	5.49	2	< 2	2
Total Suspended Solids	160.2	mg/L	15	5	30	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5

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June 2007
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2C**		**MW-4A**		**MW-4A**	
Sample Date			**06/19/07**		**06/19/07**		**06/19/07**		**06/19/07**	
Sample Time			**8:10**		**9:00**		**9:30**		**9:40**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	3.33	3	< 3	3	23.8	3	19.6	3
Lead	7421	ug/L	< 2	2	< 2	2	16.7	2	15.5	2
Total Suspended Solids	160.2	mg/L	19	5	< 6.67	6.67	104	5	205	5
Total Organic Carbon	415.1	mg/L	0.712	0.5	< 0.5	0.5	0.717	0.5	0.658	0.5

Sample ID			**MW-5A**		**OW-1A**	
Sample Date			**06/19/07**		**06/19/07**	
Sample Time			**11:30**		**12:20**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	28.4	3
Lead	7421	ug/L	< 2	2	13.4	2
Total Suspended Solids	160.2	mg/L	8	5	192	5
Total Organic Carbon	415.1	mg/L	0.672	0.5	0.661	0.5

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July 2007
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2B**		**MW-2D**		**MW-3A**	
Sample Date			**07/18/07**		**07/18/07**		**07/18/07**		**07/18/07**	
Sample Time			**8:45**		**9:15**		**10:00**		**11:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0624	0.03	0.0443	0.03	< 0.03	0.03	0.031	0.03
Chromium	6010B	ug/L	< 3	3	32.5	3	< 3	3	< 3	3
Lead	7421	ug/L	< 2	2	11.3	2	< 2	2	< 2	2
Total Suspended Solids	160.2	mg/L	58.5	5	290	5	25	5	48.5	5
Total Organic Carbon	415.1	mg/L	0.614	0.5	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			**MW-3B**		**MW-3C**		**MW-3C**		**MW-4A**	
Sample Date			**07/18/07**		**07/18/07**		**07/18/07**		**07/18/07**	
Sample Time			**12:15**		**12:55**		**13:00**		**8:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0437	0.03	0.0437	0.03	0.0431	0.03	0.0395	0.03
Chromium	6010B	ug/L	8.2	3	5.55	3	6.5	3	< 3	3
Lead	7421	ug/L	6.48	2	2.08	2	< 2	2	16.7	2
Total Suspended Solids	160.2	mg/L	218	5	56.5	5	227	5	312	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5	0.641	0.5

Sample ID			**MW-4B**		**MW-4C**		**MW-5A**		**OW-1A**	
Sample Date			**07/18/07**		**07/18/07**		**07/18/07**		**07/18/07**	
Sample Time			**8:50**		**9:30**		**11:00**		**11:35**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0437	0.03	< 0.03	0.03	0.0503	0.03	0.063	0.03
Chromium	6010B	ug/L	5.84	3	45.3	3	< 3	3	< 3	3
Lead	7421	ug/L	4.25	2	19.8	2	< 2	2	< 2	2
Total Suspended Solids	160.2	mg/L	377	5	468	5	7.5	5	91.5	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	0.595	0.5	0.777	0.5

Sample ID			**OW-1B**	
Sample Date			**07/18/07**	
Sample Time			**12:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.063	0.03
Chromium	6010B	ug/L	67.2	3
Lead	7421	ug/L	24.8	2
Total Suspended Solids	160.2	mg/L	269	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5

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ug/l = micrograms per liter
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August 2007
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2E**		**MW-4A**		**MW-4A**	
Sample Date			**08/31/07**		**08/31/07**		**08/31/07**		**08/31/07**	
Sample Time			**8:30**		**9:30**		**10:50**		**10:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.078	0.03	< 0.03	0.03	< 0.03	0.03	0.0326	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	15.7	3	18	3
Lead	7421	ug/L	< 2	2	< 2	2	7.17	2	7.69	2
Total Suspended Solids	160.2	mg/L	12.5	5	< 6.67	6.67	290	5	495	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			**MW-5A**		**OW-1A**	
Sample Date			**08/31/07**		**08/31/07**	
Sample Time			**11:30**		**12:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0587	0.03	< 0.03	0.03
Chromium	6010B	ug/L	14	3	32.8	3
Lead	7421	ug/L	< 2	2	9.89	2
Total Suspended Solids	160.2	mg/L	48.5	5	46	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5

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September 2007
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2B**		**MW-2D**		**MW-4B**		**MW-4B**	
Sample Date			**09/12/07**		**09/12/07**		**09/12/07**		**09/12/07**	
Sample Time			**9:45**		**10:30**		**12:35**		**12:40**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	17.3	3	8.19	3
Lead	7421	ug/L	< 2	2	< 2	2	17.8	2	11.8	2
Total Suspended Solids	160.2	mg/L	7.5	5	< 6.67	6.67	82.5	5	45.5	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			**MW-5A**		**OW-1B**	
Sample Date			**09/12/07**		**09/12/07**	
Sample Time			**13:25**		**14:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	3.61	3	9.79	3
Lead	7421	ug/L	< 2	2	6.95	2
Total Suspended Solids	160.2	mg/L	18.5	5	76.5	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5

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ug/l = micrograms per liter
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October 2007
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2D**		**MW-4A**		**MW-4C**	
Sample Date			**10/16/07**		**10/16/07**		**10/16/07**		**10/16/07**	
Sample Time			**8:40**		**9:20**		**13:00**		**13:25**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	4.09	3	< 3	3	11.7	3	28.1	3
Lead	7421	ug/L	11.7	2	< 2	2	13.6	2	16.4	2
Total Suspended Solids	160.2	mg/L	21.3	5	< 5	5	84.5	5	315	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			**MW-4C**		**MW-5A**		**OW-1A**	
Sample Date			**10/16/07**		**10/17/07**		**10/17/07**	
Sample Time			**13:30**		**10:50**		**11:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	34.2	3	< 3	3	17.8	3
Lead	7421	ug/L	17.8	2	< 2	2	14.9	2
Total Suspended Solids	160.2	mg/L	241	5	10.7	5	69	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

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mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

November 2007
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2B**		**MW-2E**		**MW-4B**		**MW-5A**	
Sample Date			**11/27/07**		**11/27/07**		**11/27/07**		**11/27/07**	
Sample Time			**12:10**		**13:00**		**14:35**		**15:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	17.7	3	3.23	3
Lead	7421	ug/L	< 2	2	< 2	2	15.1	2	< 2	2
Total Suspended Solids	160.2	mg/L	< 6.67	6.67	< 5	5	74	5	8.5	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			**MW-5A**		**OW-1B**	
Sample Date			**11/27/07**		**11/27/07**	
Sample Time			**15:20**		**16:10**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	4.67	3	10.2	3
Lead	7421	ug/L	< 2	2	4.27	2
Total Suspended Solids	160.2	mg/L	< 5	5	59.5	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5

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mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

December 2007
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2C		MW-4A		MW-5A	
Sample Date			12/18/07		12/18/07		12/18/07		12/18/07	
Sample Time			9:45		10:40		12:30		13:10	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	7.98	3	< 3	3	20.9	3	4.89	3
Lead	7421	ug/L	7.16	2	< 2	2	18.9	2	< 2	2
Total Suspended Solids	160.2	mg/L	57	10	< 6.67	6.67	438	10	11.5	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5	0.546	0.5

Sample ID			OW-1A		OW-1A2	
Sample Date			12/18/07		12/18/07	
Sample Time			14:20		14:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	12.1	3	11.7	3
Lead	7421	ug/L	3.93	2	3.4	2
Total Suspended Solids	160.2	mg/L	59	5	119	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

January 2008
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2B		MW-2D		MW-4B		MW-4C	
Sample Date			01/09/08		01/09/08		01/09/08		01/09/08	
Sample Time			8:45		9:40		12:15		13:00	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	39.8	3	14	3
Lead	7421	ug/L	< 2	2	< 2	2	34.2	2	14.5	2
Total Suspended Solids	160.2	mg/L	6	5	8	6.67	117	5	96.5	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			MW-5A		OW-1B		OW-1B2	
Sample Date			01/09/08		01/09/08		01/09/08	
Sample Time			14:00		16:45		16:50	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	6.68	3	20.4	3	26.1	3
Lead	7421	ug/L	< 2	2	6.39	2	8.15	2
Total Suspended Solids	160.2	mg/L	13.5	5	109	10	98	10
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

NA = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

February 2008
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2E		MW-4A		MW-5A	
Sample Date			02/25/08		02/25/08		02/25/08		02/25/08	
Sample Time			9:40		11:10		12:00		13:45	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0461	0.03	< 0.03	0.03	< 0.03	0.03	0.0496	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	36.9	3	< 3	3
Lead	7421	ug/L	< 2	2	< 2	2	14.7	2	< 2	2
Total Suspended Solids	160.2	mg/L	19.5	5	11.3	6.67	138	5	27	5
Total Organic Carbon	415.1	mg/L	1.06	0.5	< 0.5	0.5	0.573	0.5	< 0.5	0.5

Sample ID			OW-1A		OW-1A2	
Sample Date			02/25/08		02/25/08	
Sample Time			14:30		14:35	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	13.2	3	7.48	3
Lead	7421	ug/L	11	2	7.65	2
Total Suspended Solids	160.2	mg/L	94	5	66	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5

NA = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

March 2008
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2B		MW-2C		MW-4B		MW-5A	
Sample Date			03/12/08		03/12/08		03/12/08		03/12/08	
Sample Time			8:50		9:40		10:30		11:10	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	3.57	3	12.8	3	6.41	3
Lead	7421	ug/L	< 2	2	< 2	2	3.89	2	< 2	2
Total Suspended Solids	160.2	mg/L	6	5	8.67	6.67	59	5	< 5	5
Total Organic Carbon	415.1	mg/L	1.46	0.5	0.92	0.5	0.95	0.5	0.865	0.5

Sample ID			MW-5A2		OW-1B	
Sample Date			03/12/08		03/12/08	
Sample Time			11:15		13:40	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	6.33	3	16.5	3
Lead	7421	ug/L	< 2	2	< 2	2
Total Suspended Solids	160.2	mg/L	< 5	5	82	10
Total Organic Carbon	415.1	mg/L	0.795	0.5	1.31	0.5

NA = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

April 2008
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2D		MW-4A		MW-4C	
Sample Date			04/10/08		04/10/08		04/10/08		04/10/08	
Sample Time			8:55		10:05		11:40		12:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0836	0.03	0.0424	0.03	0.0372	0.03	0.0316	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	9.82	3	30.4	3
Lead	7421	ug/L	< 2	2	< 2	2	12.3	2	16.5	2
Total Suspended Solids	160.2	mg/L	10.7	6.67	< 5	5	188	10	25	5
Total Organic Carbon	415.1	mg/L	3.6	0.5	1.29	0.5	1.26	0.5	1.72	0.5

Sample ID			MW-4C		MW-5A		OW-1A	
Sample Date			04/10/08		04/10/08		04/10/08	
Sample Time			12:35		13:15		14:00	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0428	0.03	0.663	0.03	0.0304	0.03
Chromium	6010B	ug/L	8.72	3	3.06	3	18.8	3
Lead	7421	ug/L	< 2	2	< 2	2	< 2	2
Total Suspended Solids	160.2	mg/L	48.5	5	<5	5	86	10
Total Organic Carbon	415.1	mg/L	1.58	0.5	1.84	0.5	1.38	0.5

NA = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
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May 2008
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2B		MW-2E		MW-4B		MW-4B	
Sample Date			05/15/08		05/15/08		05/15/08		05/15/08	
Sample Time			8:40		9:30		10:30		10:40	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	18.5	3	16	3
Lead	7421	ug/L	< 2	2	< 2	2	58.9	2	12.8	2
Total Suspended Solids	160.2	mg/L	< 6.67	6.67	< 5	5	180	5	143	5
Total Organic Carbon	415.1	mg/L	2.52	0.5	1	0.5	1.2	0.5	1.16	0.5

Sample ID			MW-5A		OW-1B	
Sample Date			05/15/08		05/15/08	
Sample Time			11:45		13:50	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	18.7	3
Lead	7421	ug/L	< 2	2	5.33	2
Total Suspended Solids	160.2	mg/L	9	5	133	10
Total Organic Carbon	415.1	mg/L	1.37	0.5	1.08	0.5

NA = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

June 2008
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2C		MW-4A		MW-4A	
Sample Date			06/24/08		06/24/08		06/24/08		06/24/08	
Sample Time			8:40		9:30		11:10		11:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	4.98	3	5.92	3
Lead	7421	ug/L	4.07	2	< 2	2	6.66	2	6.16	2
Total Suspended Solids	160.2	mg/L	30	5	< 6.67	6.67	182	5	97	5
Total Organic Carbon	415.1	mg/L	1.43	0.5	0.906	0.5	0.792	0.5	0.629	0.5

Sample ID			MW-5A		OW-1A	
Sample Date			06/24/08		06/24/08	
Sample Time			11:55		13:00	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	18	3
Lead	7421	ug/L	< 2	2	4.97	2
Total Suspended Solids	160.2	mg/L	< 5	5	89	5
Total Organic Carbon	415.1	mg/L	0.754	0.5	0.533	0.5

NA = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

July 2008
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2B		MW-2D		MW-3A	
Sample Date			07/30/08		07/30/08		07/30/08		07/30/08	
Sample Time			8:30		9:20		10:30		11:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0412	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	4.32	3	< 3	3	3.49	3
Lead	7421	ug/L	5.24	2	< 2	2	< 2	2	< 2	2
Total Suspended Solids	160.2	mg/L	8	5	< 5	5	< 6.67	6.67	< 5	5
Total Organic Carbon	415.1	mg/L	0.964	0.5	0.81	0.5	0.904	0.5	0.647	0.5

Sample ID			MW-3B		MW-3C		MW-3C		MW-4A	
Sample Date			07/30/08		07/30/08		07/30/08		07/31/08	
Sample Time			12:15		15:15		15:20		8:20	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0365	0.03	0.0308	0.03	0.0346	0.03	< 0.03	0.03
Chromium	6010B	ug/L	24.1	3	12.2	3	25.9	3	11.1	3
Lead	7421	ug/L	< 2	2	5.64	2	10.3	2	7.13	2
Total Suspended Solids	160.2	mg/L	220	5	90	5	179	5	48	5
Total Organic Carbon	415.1	mg/L	0.658	0.5	0.739	0.5	0.557	0.5	0.645	0.5

Sample ID			MW-4B		MW-4C		MW-5A		OW-1A	
Sample Date			07/31/08		07/31/08		07/31/08		07/31/08	
Sample Time			10:05		10:45		11:55		12:35	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0332	0.03	< 0.03	0.03	< 0.03	0.03	0.0318	0.03
Chromium	6010B	ug/L	12.2	3	16.4	3	< 3	3	8.7	3
Lead	7421	ug/L	9.75	2	< 2	2	< 2	2	5.34	2
Total Suspended Solids	160.2	mg/L	963	5	175	5	42.5	5	61.5	5
Total Organic Carbon	415.1	mg/L	0.914	0.5	0.579	0.5	0.599	0.5	0.747	0.5

Sample ID			OW-1B	
Sample Date			07/31/08	
Sample Time			13:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03
Chromium	6010B	ug/L	14.1	3
Lead	7421	ug/L	5.53	2
Total Suspended Solids	160.2	mg/L	123	5
Total Organic Carbon	415.1	mg/L	0.689	0.5

NA = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

August 2008
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2E		MW-4A		MW-4A2	
Sample Date			08/13/08		08/13/08		08/13/08		08/13/08	
Sample Time			8:30		9:15		10:35		10:40	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0624	0.03	0.047	0.03	< 0.03	0.03	0.0315	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	13.2	3	10.7	3
Lead	7421	ug/L	< 2	2	< 2	2	6.06	2	3.93	2
Total Suspended Solids	160.2	mg/L	14.5	5	24	6.67	86	5	61.5	5
Total Organic Carbon	415.1	mg/L	2.42	0.5	0.968	0.5	0.546	0.5	0.849	0.5

Sample ID			MW-5A		OW-1A	
Sample Date			08/13/08		08/13/08	
Sample Time			11:40		12:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0361	0.03	0.0356	0.03
Chromium	6010B	ug/L	3.43	3	9.49	3
Lead	7421	ug/L	< 2	2	4.03	2
Total Suspended Solids	160.2	mg/L	8.5	5	82	5
Total Organic Carbon	415.1	mg/L	0.52	0.5	0.523	0.5

NA = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

September 2008
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2B		MW-2C		MW-4B		MW-4B	
Sample Date			09/17/08		09/17/08		09/17/08		09/17/08	
Sample Time			9:10		9:55		13:25		13:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	77.5	3	15.9	3
Lead	7421	ug/L	< 2	2	< 2	2	126	2	21.4	2
Total Suspended Solids	160.2	mg/L	< 5	5	< 6.67	6.67	288	5	345	10
Total Organic Carbon	415.1	mg/L	1.86	0.5	0.777	0.5	0.747	0.5	< 0.5	0.5

Sample ID			MW-5A		OW-1B	
Sample Date			09/17/08		09/18/08	
Sample Time			14:05		9:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	10.2	3	9.65	3
Lead	7421	ug/L	4.16	2	4.79	2
Total Suspended Solids	160.2	mg/L	67.5	5	5	5
Total Organic Carbon	415.1	mg/L	0.587	0.5	0.528	0.5

NA = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

October 2008
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2D		MW-4A		MW-4C	
Sample Date			10/15/08		10/15/08		10/15/08		10/15/08	
Sample Time			8:15		9:10		10:15		11:10	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	NA	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	4.3	3	14.2	3
Lead	7421	ug/L	2.88	2	< 2	2	3.07	2	5.28	2
Total Suspended Solids	160.2	mg/L	20	6.67	< 5	5	37	5	178	5
Total Organic Carbon	415.1	mg/L	0.758	0.5	< 0.5	0.5	0.572	0.5	NA	0.5

Sample ID			MW-4C		MW-5A		OW-1A	
Sample Date			10/15/08		10/15/08		10/15/08	
Sample Time			11:15		11:50		12:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	116	3	4.93	3	13.1	3
Lead	7421	ug/L	65.4	2	4.28	2	6.52	2
Total Suspended Solids	160.2	mg/L	134	5	87	5	505	10
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	0.595	0.5

NA = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

November 2008
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2B		MW-2E		MW-4B		MW-4C	
Sample Date			11/19/08		11/19/08		11/19/08		11/19/08	
Sample Time			9:40		10:40		11:25		15:15	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	7.77	3	NA	NA
Lead	7421	ug/L	< 2	2	< 2	2	4.86	2	NA	NA
Total Suspended Solids	160.2	mg/L	12.7	6.67	10	5	71	5	NA	NA
Total Organic Carbon	415.1	mg/L	0.716	0.5	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			MW-5A		MW-5A2		OW-1B	
Sample Date			11/19/08		11/19/08		11/19/08	
Sample Time			13:25		13:30		14:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	5.91	3	< 3	3	10.1	3
Lead	7421	ug/L	2.03	2	< 2	2	4.1	2
Total Suspended Solids	160.2	mg/L	14	5	5.5	5	67	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

NA = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

December 2008
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2C		MW-4A		MW-5A	
Sample Date			12/04/08		12/04/08		12/04/08		12/04/08	
Sample Time			8:30		9:30		10:30		12:00	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0587	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	< 3	3	< 3	3
Lead	7421	ug/L	2.66	2	< 2	2	6.95	2	< 2	2
Total Suspended Solids	160.2	mg/L	15.5	5	< 6.67	6.67	64	5	5.5	5
Total Organic Carbon	415.1	mg/L	1.18	0.5	0.975	0.5	< 0.5	0.5	0.514	0.5

Sample ID			OW-1A		OW-1A2	
Sample Date			12/04/08		12/04/08	
Sample Time			12:55		13:00	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	4.66	3	< 3	3
Lead	7421	ug/L	3.22	2	3.04	2
Total Suspended Solids	160.2	mg/L	71.5	5	65.5	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5

NA = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

January 2009
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2B**		**MW-2D**		**MW-4A**		**MW-5A**	
Sample Date			**01/13/09**		**01/13/09**		**01/13/09**		**01/13/09**	
Sample Time			**10:15**		**11:30**		**12:25**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	3.52	3	< 3	3	4.48	3	5.8	3
Lead	7421	mg/L	<0.002	0.002	<0.002	0.002	<0.002	0.002	<0.002	0.002
Total Suspended Solids	160.2	mg/L	< 5	5	< 6.67	6.67	9.5	5	16	5
Total Organic Carbon	415.1	mg/L	1.09	0.5	0.618	0.5	0.688	0.5	< 0.5	0.5

Sample ID			**OW-1A**		**OW-1A2**	
Sample Date			**01/13/09**		**01/13/09**	
Sample Time			**14:45**		**14:50**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.25	0.03	< 0.03	0.03
Chromium	6010B	ug/L	6.23	3	3.34	3
Lead	7421	mg/L	<0.002	0.002	<0.002	0.002
Total Suspended Solids	160.2	mg/L	39.5	5	32	5
Total Organic Carbon	415.1	mg/L	0.666	0.5	< 0.5	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The reporting units for Lead have been changed from ug/L to mg/L

February 2009
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2E**		**MW-4B**		**MW-4C**	
Sample Date			**02/17/09**		**02/17/09**		**02/17/09**		**02/17/09**	
Sample Time			**11:00**		**12:10**		**15:30**		**16:25**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	12.4	3	40.7	3
Lead	7421	mg/L	< 0.002	0.002	< 0.002	0.002	0.0085	0.002	0.0117	0.002
Total Suspended Solids	160.2	mg/L	16.5	5	< 6.67	6.67	41	5	40	5
Total Organic Carbon	415.1	mg/L	0.927	0.5	< 0.5	0.5	0.614	0.5	< 0.5	0.5

Sample ID			**MW-5A**		**OW-1B**		**OW-1B2**	
Sample Date			**02/18/09**		**02/18/09**		**02/18/09**	
Sample Time			**8:30**		**9:20**		**9:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	5.01	3	5.2	3	5.23	3
Lead	7421	mg/L	< 0.002	0.002	< 0.002	0.002	0.0023	0.002
Total Suspended Solids	160.2	mg/L	8.5	5	18	5	16.5	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	0.579	0.5	0.531	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The reporting units for Lead have been changed from ug/L to mg/L

March 2009
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2B**		**MW-2C**		**MW-4B**		**MW-5A**	
Sample Date			**03/18/09**		**03/18/09**		**03/18/09**		**03/18/09**	
Sample Time			**9:15**		**12:45**		**13:30**		**15:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	6.35	3	69.1	3
Lead	6020	mg/L	< 0.001	0.001	< 0.001	0.001	0.00985	0.001	0.0118	0.001
Total Suspended Solids	160.2	mg/L	< 5	5	< 6.67	6.67	137	5	123	5
Total Organic Carbon	415.1	mg/L	0.646	0.5	0.662	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			**MW-5A2**		**OW-1B**	
Sample Date			**03/18/09**		**03/18/09**	
Sample Time			**15:20**		**16:10**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	30	3	16.5	3
Lead	6020	mg/L	0.00644	0.001	0.00269	0.001
Total Suspended Solids	160.2	mg/L	127	5	82.5	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The analytical method for Lead had been changed by the laboratory from 7421 to 6020, and the reporting units have been changed from ug/L to mg/L

April 2009
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2D**		**MW-4A**		**MW-4C**	
Sample Date			**04/22/09**		**04/22/09**		**04/22/09**		**04/22/09**	
Sample Time			**9:00**		**9:55**		**11:15**		**12:05**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.139	0.03	0.16	0.03	0.14	0.03	0.145	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	10.6	3	5.71	3
Lead	6020	mg/L	< 0.001	0.001	< 0.001	0.001	0.00291	0.001	< 0.001	0.001
Total Suspended Solids	160.2	mg/L	20	6.67	< 5	5	188	5	42.5	5
Total Organic Carbon	415.1	mg/L	2.68	0.5	0.753	0.5	0.741	0.5	0.577	0.5

Sample ID			**MW-4C2**		**MW-5A**		**OW-1A**	
Sample Date			**04/22/09**		**04/22/09**		**04/22/09**	
Sample Time			**12:10**		**14:10**		**15:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.15	0.03	0.178	0.03	0.161	0.03
Chromium	6010B	ug/L	10.5	3	8.42	3	13.5	3
Lead	6020	mg/L	0.00239	0.001	< 0.001	0.001	0.00569	0.001
Total Suspended Solids	160.2	mg/L	57	5	40	5	622	20
Total Organic Carbon	415.1	mg/L	0.721	0.5	0.764	0.5	0.986	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The analytical method for Lead had been changed by the laboratory from 7421 to 6020, and the reporting units have been changed from ug/L to mg/L

May 2009
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2B		MW-2E		MW-4B		MW-4B2	
Sample Date			05/20/09		05/15/08		05/20/09		05/20/09	
Sample Time			9:00		9:30		13:20		13:25	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	6.82	3	7.23	3
Lead	6020	mg/L	< 0.001	0.001	< 0.002	0.001	0.00189	0.001	0.00357	0.001
Total Suspended Solids	160.2	mg/L	< 6.67	6.67	< 6.67	5	59	5	112	5
Total Organic Carbon	415.1	mg/L	1.21	0.5	< 0.5	0.5	0.563	0.5	0.952	0.5

Sample ID			MW-5A		OW-1B	
Sample Date			05/20/09		05/20/09	
Sample Time			14:05		14:45	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	3.89	3	12.1	3
Lead	6020	mg/L	< 0.001	0.001	0.00115	0.001
Total Suspended Solids	160.2	mg/L	26.5	5	193	5
Total Organic Carbon	415.1	mg/L	1.04	0.5	0.895	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The analytical method for Lead had been changed by the laboratory from 7421 to 6020, and the reporting units have been changed from ug/L to mg/L

June 2009
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2C**		**MW-4A**		**MW-4A2**	
Sample Date			**06/22/09**		**06/22/09**		**06/22/09**		**06/22/09**	
Sample Time			**9:05**		**10:00**		**11:45**		**11:50**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	4.78	3	4.89	3
Lead	6020	mg/L	< 0.001	0.001	< 0.001	0.001	0.00587	0.001	0.00635	0.001
Total Suspended Solids	160.2	mg/L	23.5	5	< 6.67	6.67	70.5	5	189	5
Total Organic Carbon	415.1	mg/L	2.94	0.5	1.19	0.5	0.964	0.5	0.805	0.5

Sample ID			**MW-5A**		**OW-1A**	
Sample Date			**06/22/09**		**06/22/09**	
Sample Time			**14:20**		**15:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	23.3	3	9.38	3
Lead	6020	mg/L	< 0.001	0.001	< 0.001	0.001
Total Suspended Solids	160.2	mg/L	11	5	35	5
Total Organic Carbon	415.1	mg/L	1.04	0.5	1.1	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The analytical method for Lead had been changed by the laboratory from 7421 to 6020, and the reporting units have been changed from ug/L to mg/L

July 2009
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2B**		**MW-2D**		**MW-3A**	
Sample Date			**07/28/09**		**07/28/09**		**07/28/09**		**07/28/09**	
Sample Time			**9:10**		**10:15**		**11:30**		**12:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	< 3	3	21.1	3
Lead	6020	mg/L	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	0.02	0.001
Total Suspended Solids	160.2	mg/L	13	5	< 5	5	10	6.67	109	5
Total Organic Carbon	415.1	mg/L	0.588	0.5	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			**MW-3B**		**MW-3C**		**MW-3C2**		**MW-4A**	
Sample Date			**07/28/09**		**07/28/09**		**07/28/09**		**07/29/09**	
Sample Time			**15:50**		**16:45**		**16:50**		**9:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	15.3	3	6.83	3	< 3	3
Lead	6020	mg/L	< 0.001	0.001	0.00666	0.001	0.00464	0.001	0.00341	0.001
Total Suspended Solids	160.2	mg/L	11.5	5	54	5	44.5	5	36.5	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			**MW-4B**		**MW-4C**		**MW-5A**		**OW-1A**	
Sample Date			**07/29/09**		**07/29/09**		**07/29/09**		**07/29/09**	
Sample Time			**10:10**		**11:00**		**11:45**		**13:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	21.6	3	24.1	3	< 3	3	13.7	3
Lead	6020	mg/L	0.0202	0.001	0.0099	0.001	< 0.001	0.001	0.00275	0.001
Total Suspended Solids	160.2	mg/L	205	5	167	5	36.5	5	66	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5	< 0.5	0.5

Sample ID			**OW-1B**	
Sample Date			**07/29/09**	
Sample Time			**14:10**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03
Chromium	6010B	ug/L	7.09	3
Lead	6020	mg/L	0.00416	0.001
Total Suspended Solids	160.2	mg/L	51.5	5
Total Organic Carbon	415.1	mg/L	< 0.5	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The analytical method for Lead had been changed by the laboratory from 7421 to 6020, and the reporting units have been changed from ug/L to mg/L

August 2009
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2E**		**MW-4A**		**MW-4A2**	
Sample Date			**08/13/09**		**08/13/09**		**08/13/09**		**08/13/09**	
Sample Time			**8:55**		**9:50**		**11:35**		**11:40**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	7.92	3	7.99	3
Lead	6020	mg/L	< 0.001	0.001	< 0.001	0.001	0.00336	0.001	0.00673	0.001
Total Suspended Solids	160.2	mg/L	20.5	5	< 6.67	6.67	112	5	233	10
Total Organic Carbon	415.1	mg/L	2.65	0.5	1.26	0.5	1.47	0.5	1.46	0.5

Sample ID			**MW-5A**		**OW-1A**	
Sample Date			**08/13/09**		**08/13/09**	
Sample Time			**12:10**		**13:35**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	11.3	3
Lead	6020	mg/L	< 0.001	0.001	0.00335	0.001
Total Suspended Solids	160.2	mg/L	< 5	5	101	5
Total Organic Carbon	415.1	mg/L	1.21	0.5	1.29	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The analytical method for Lead had been changed by the laboratory from 7421 to 6020, and the reporting units have been changed from ug/L to mg/L

September 2009
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2B**		**MW-2C**		**MW-4B**		**MW-4B2**	
Sample Date			**09/24/09**		**09/24/09**		**09/24/09**		**09/24/09**	
Sample Time			**8:30**		**9:20**		**10:00**		**10:10**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	0.0361	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	< 3	3	14.6	3	20	3
Lead	6020	mg/L	0.00363	0.001	< 0.001	0.001	0.0111	0.001	0.0141	0.001
Total Suspended Solids	160.2	mg/L	71	5	107	5	162	5	281	10
Total Organic Carbon	415.1	mg/L	2.91	0.5	1.69	0.5	1.59	0.5	1.44	0.5

Sample ID			**MW-5A**		**OW-1B**	
Sample Date			**09/24/09**		**09/24/09**	
Sample Time			**12:10**		**13:05**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	< 3	3	12.8	3
Lead	6020	mg/L	0.00398	0.001	0.00703	0.001
Total Suspended Solids	160.2	mg/L	8	5	242	10
Total Organic Carbon	415.1	mg/L	1.86	0.5	1.61	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The analytical method for Lead had been changed by the laboratory from 7421 to 6020, and the reporting units have been changed from ug/L to mg/L

October 2009
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2D**		**MW-4A**		**MW-4C**	
Sample Date			**10/13/09**		**10/13/09**		**10/13/09**		**10/13/09**	
Sample Time			**8:15**		**9:10**		**9:50**		**10:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	3.83	3	3.01	3	12.7	3	12.5	3
Lead	6020	mg/L	0.0021	0.001	< 0.001	0.001	0.00496	0.001	0.00579	0.001
Total Suspended Solids	160.2	mg/L	50.7	6.67	14.5	5	114	5	700	10
Total Organic Carbon	415.1	mg/L	1.49	0.5	0.878	0.5	1.15	0.5	0.958	0.5

Sample ID			**MW-4C2**		**MW-5A**		**OW-1A**	
Sample Date			**10/13/09**		**10/13/09**		**10/13/09**	
Sample Time			**10:50**		**12:15**		**13:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	12.3	3	4.02	3	13.5	3
Lead	6020	mg/L	0.00341	0.001	< 0.001	0.001	0.00235	0.001
Total Suspended Solids	160.2	mg/L	160	5	19.5	5	94	5
Total Organic Carbon	415.1	mg/L	0.799	0.5	0.859	0.5	0.849	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The analytical method for Lead had been changed by the laboratory from 7421 to 6020, and the reporting units have been changed from ug/L to mg/L

November 2009
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2B**		**MW-4B**		**MW-5A**	
Sample Date			**11/17/09**		**11/17/09**		**11/17/09**	
Sample Time			**9:00**		**13:45**		**14:20**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0394	0.03	< 0.03	0.03	0.0411	0.03
Chromium	6010B	ug/L	< 3	3	13.3	3	< 3	3
Lead	6020	mg/L	< 0.001	0.001	0.0059	0.001	< 0.001	0.001
Total Suspended Solids	160.2	mg/L	6.67	6.67	63	5	12	5
Total Organic Carbon	415.1	mg/L	2.41	0.5	1.04	0.5	0.964	0.5

Sample ID			**MW-5A2**		**OW-1B**	
Sample Date			**11/17/09**		**11/17/09**	
Sample Time			**14:25**		**15:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0351	0.03	0.0446	0.03
Chromium	6010B	ug/L	< 3	3	13.4	3
Lead	6020	mg/L	< 0.001	0.001	0.0025	0.001
Total Suspended Solids	160.2	mg/L	7	5	60	5
Total Organic Carbon	415.1	mg/L	1.12	0.5	1.15	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The analytical method for Lead had been changed by the laboratory from 7421 to 6020, and the reporting units have been changed from ug/L to mg/L

December 2009
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2C**		**MW-4A**		**MW-5A**	
Sample Date			**12/17/09**		**12/17/09**		**12/17/09**		**12/17/09**	
Sample Time			**8:30**		**9:40**		**10:15**		**11:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0392	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Chromium	6010B	ug/L	4.56	3	< 3	3	10.9	3	6.22	3
Lead	6020	mg/L	0.00227	0.001	< 0.001	0.001	0.00349	0.001	< 0.001	0.001
Total Suspended Solids	160.2	mg/L	50.5	5	6.67	6.67	87	5	11.5	5
Total Organic Carbon	415.1	mg/L	0.877	0.5	1.02	0.5	< 0.5	0.5	0.632	0.5

Sample ID			**OW-1A**		**OW-1A2**	
Sample Date			**12/17/09**		**12/17/09**	
Sample Time			**14:00**		**14:10**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.03	0.03	0.031	0.03
Chromium	6010B	ug/L	12	3	16.2	3
Lead	6020	mg/L	0.00278	0.001	0.0029	0.001
Total Suspended Solids	160.2	mg/L	207	5	126	5
Total Organic Carbon	415.1	mg/L	1.14	0.5	1.58	0.5

-- = Not Applicable
mg/l = milligrams per liter
ug/l = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The analytical method for Lead had been changed by the laboratory from 7421 to 6020, and the reporting units have been changed from ug/L to mg/L

January 2010
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2B**		**MW-2D**		**MW-4B**		**MW-4C**	
Sample Date			**01/19/10**		**01/19/10**		**01/19/10**		**01/19/10**	
Sample Time			**9:10**		**10:10**		**11:20**		**12:20**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	0.0352	0.0300	< 0.0300	0.0300	0.0317	0.0300
Chromium	6010B	ug/L	< 3.00	3.00	< 3.00	3.00	3.71	3.00	6.06	3.00
Lead	6020	mg/L	< 0.00100	0.00100	< 0.00100	0.00100	0.00361	0.00100	0.00293	0.00100
Total Suspended Solids	160.2	mg/L	< 5.00	5.00	6.67	6.67	43.0	5.00	117	5.00
Total Organic Carbon	415.1	mg/L	1.26	0.500	0.642	0.500	0.677	0.500	0.785	0.500

Sample ID			**MW-5A**		**OW-1B**		**OW-1B2**	
Sample Date			**01/19/10**		**01/19/10**		**01/19/10**	
Sample Time			**13:55**		**14:50**		**14:55**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0337	0.0300	0.0431	0.0300	0.0525	0.0300
Chromium	6010B	ug/L	7.96	3.00	30.8	3.00	18.1	3.00
Lead	6020	mg/L	0.00332	0.00100	0.00490	0.00100	0.00407	0.00100
Total Suspended Solids	160.2	mg/L	10.0	5.00	137	5.00	115	5.00
Total Organic Carbon	415.1	mg/L	0.712	0.500	0.626	0.500	0.686	0.500

-- = Not Applicable
mg/L = milligrams per liter
ug/L = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The analytical method for Lead had been changed by the laboratory from 7421 to 6020.

February 2010
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2E		MW-4A		MW-5A	
Sample Date			**02/23/10**		**02/23/10**		**02/23/10**		**02/23/10**	
Sample Time			**9:45**		**10:30**		**11:30**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	< 3.00	3.00	< 3.00	3.00	4.04	3.00	< 3.00	3.00
Lead	6020	mg/L	< 0.00100	0.00100	< 0.00100	0.00100	0.0112	0.00100	< 0.00100	0.00100
Total Suspended Solids	160.2	mg/L	9.00	5.00	10.7	6.67	92.5	5.00	< 5.00	5.00
Total Organic Carbon	415.1	mg/L	2.63	0.500	0.667	0.500	1.30	0.500	1.08	0.500

Sample ID			OW-1A		OW-1A2	
Sample Date			**02/23/10**		**02/23/10**	
Sample Time			**14:10**		**14:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	7.47	3.00	5.24	3.00
Lead	6020	mg/L	< 0.00100	0.00100	0.00884	0.00100
Total Suspended Solids	160.2	mg/L	57.5	5.00	32.5	5.00
Total Organic Carbon	415.1	mg/L	1.83	0.500	1.13	0.500

-- = Not Applicable
mg/L = milligrams per liter
ug/L = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The analytical method for Lead had been changed by the laboratory from 7421 to 6020.

March 2010
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2B**		**MW-2C**		**MW-4B**		**MW-5A**	
Sample Date			**03/16/10**		**03/16/10**		**03/16/10**		**03/16/10**	
Sample Time			**8:45**		**9:55**		**10:50**		**13:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	< 3.00	3.00	< 3.00	3.00	15.3	3.00	< 3.00	3.00
Lead	6020	mg/L	< 0.00100	0.00100	< 0.00100	0.00100	0.00632	0.00100	< 0.00100	0.00100
Total Suspended Solids	160.2	mg/L	11.0	5.00	8.00	6.67	572	5.00	13.5	5.00
Total Organic Carbon	415.1	mg/L	2.62	0.500	1.66	0.500	0.808	0.500	< 0.500	0.500

Sample ID			**MW-5A2**		**OW-1B**	
Sample Date			**03/16/10**		**03/16/10**	
Sample Time			**13:40**		**14:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	< 3.00	3.00	13.7	3.00
Lead	6020	mg/L	< 0.00100	0.00100	0.00207	0.00100
Total Suspended Solids	160.2	mg/L	12.5	5.00	165	10.0
Total Organic Carbon	415.1	mg/L	0.850	0.500	0.567	0.500

-- = Not Applicable
mg/L = milligrams per liter
ug/L = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

April 2010
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2D**		**MW-4A**		**MW-4C**	
Sample Date			**04/28/10**		**04/28/10**		**04/28/10**		**04/28/10**	
Sample Time			**8:50**		**10:15**		**10:55**		**12:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	< 3.00	3.00	< 3.00	3.00	10.7	3.00	12.7	3.00
Lead	6020	mg/L	0.00146	0.00100	< 0.001	0.00100	0.00399	0.00100	0.00262	0.00100
Total Suspended Solids	160.2	mg/L	24.0	6.67	9.50	5.00	250	10.0	95.0	5.00
Total Organic Carbon	415.1	mg/L	1.46	0.500	0.916	0.500	0.696	0.500	0.651	0.500

Sample ID			**MW-4C2**		**MW-5A**		**OW-1A**	
Sample Date			**04/28/10**		**04/28/10**		**04/28/10**	
Sample Time			**12:05**		**13:30**		**14:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	10.4	3.00	< 3.00	3.00	13.6	3.00
Lead	6020	mg/L	0.00224	0.00100	< 0.001	0.00100	0.00370	0.00100
Total Suspended Solids	160.2	mg/L	97.0	5.00	10.5	5.00	299	5.00
Total Organic Carbon	415.1	mg/L	0.560	0.500	< 0.5	0.500	0.665	0.500

-- = Not Applicable
mg/L = milligrams per liter
ug/L = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

May 2010
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2B**		**MW-2E**		**MW-4B**		**MW-4B2**	
Sample Date			**05/24/10**		**05/24/10**		**05/24/10**		**05/24/10**	
Sample Time			**10:55**		**12:05**		**13:05**		**13:10**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	< 3.00	3.00	< 3.00	3.00	6.40	3.00	7.67	3.00
Lead	6020	mg/L	0.00241	0.00100	0.00217	0.00100	0.00413	0.00100	0.00559	0.00100
Total Suspended Solids	160.2	mg/L	< 6.67	6.67	< 5.00	5.00	133	5.00	121	5.00
Total Organic Carbon	415.1	mg/L	0.574	0.500	< 0.500	0.500	< 0.500	0.500	< 0.500	0.500

Sample ID			**MW-5A**		**OW-1B**	
Sample Date			**05/24/10**		**05/24/10**	
Sample Time			**14:00**		**16:00**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	< 3.00	3.00	20.2	3.00
Lead	6020	mg/L	< 0.00100	0.00100	0.00336	0.00100
Total Suspended Solids	160.2	mg/L	11.5	5.00	49.5	5.00
Total Organic Carbon	415.1	mg/L	< 0.500	0.500	< 0.500	0.500

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June 2010
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2C		MW-4A		MW-4A2	
Sample Date			06/29/10		06/29/10		06/29/10		06/29/10	
Sample Time			8:20		9:10		11:25		11:30	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	< 3.00	3.00	< 3.00	3.00	3.10	3.00	< 3.00	3.00
Lead	6020	mg/L	< 0.00100	0.00100	< 0.00100	0.00100	0.00200	0.00100	0.00207	0.00100
Total Suspended Solids	160.2	mg/L	16.0	5.00	< 6.67	6.67	16.5	5.00	18.0	5.00
Total Organic Carbon	415.1	mg/L	2.07	0.500	1.73	0.500	1.47	0.500	1.29	0.500

Sample ID			MW-5A		OW-1A	
Sample Date			06/29/10		06/29/10	
Sample Time			12:15		13:40	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	< 3.00	3.00	9.70	3.00
Lead	6020	mg/L	< 0.00100	0.00100	0.00313	0.00100
Total Suspended Solids	160.2	mg/L	16.0	10.0	91.5	5.00
Total Organic Carbon	415.1	mg/L	1.16	0.500	0.980	0.500

-- = Not Applicable
mg/L = milligrams per liter
ug/L = micrograms per liter
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July 2010
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2B		MW-2D		MW-3A	
Sample Date			**07/13/10**		**07/13/10**		**07/13/10**		**07/13/10**	
Sample Time			**8:20**		**9:15**		**10:30**		**12:05**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0356	0.0300	0.0483	0.0300	0.0466	0.0300	0.0553	0.0300
Chromium	6010B	ug/L	3.04	3.00	< 3.00	3.00	< 3.00	3.00	< 3.00	3.00
Chromium, Dissolved	6010B	ug/L	< 3.00	3.00	< 3.00	3.00	< 3.00	3.00	< 3.00	3.00
Lead	6020	mg/L	< 0.00100	0.00100	0.00177	0.00100	0.00195	0.00100	0.00316	0.00100
Lead, Dissolved	6020	mg/L	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00100	0.00100
Total Suspended Solids	160.2	mg/L	9.50	5.00	< 5.00	5.00	6.67	6.67	< 5.00	5.00
Total Organic Carbon	415.1	mg/L	1.88	0.500	4.26	0.500	1.52	0.500	1.06	0.500

Sample ID			MW-3B		MW-3C		MW-3C2		MW-4A	
Sample Date			**07/13/10**		**07/13/10**		**07/13/10**		**07/13/10**	
Sample Time			**12:35**		**13:30**		**13:35**		**8:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0409	0.0300	0.0549	0.0300	0.0409	0.0300	0.0348	0.0300
Chromium	6010B	ug/L	4.42	3.00	< 3.00	3.00	< 3.00	3.00	16.4	3.00
Chromium, Dissolved	6010B	ug/L	< 3.00	3.00	< 3.00	3.00	< 3.00	3.00	< 3.00	3.00
Lead	6020	mg/L	0.00295	0.00100	0.00252	0.00100	0.00238	0.00100	0.00406	0.00100
Lead, Dissolved	6020	mg/L	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00100	0.00100
Total Suspended Solids	160.2	mg/L	33.5	5.00	27.5	5.00	32.0	5.00	168	5.00
Total Organic Carbon	415.1	mg/L	1.09	0.500	1.19	0.500	1.03	0.500	1.28	0.500

Sample ID			MW-4B		MW-4C		MW-5A		OW-1A	
Sample Date			**07/13/10**		**07/13/10**		**07/13/10**		**07/13/10**	
Sample Time			**8:55**		**9:45**		**11:00**		**11:40**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0352	0.0300	0.0409	0.0300	0.0330	0.0300	0.0466	0.0300
Chromium	6010B	ug/L	8.53	3.00	14.6	3.00	< 3.00	3.00	8.25	3.00
Chromium, Dissolved	6010B	ug/L	< 3.00	3.00	< 3.00	3.00	< 3.00	3.00	< 3.00	3.00
Lead	6020	mg/L	0.00474	0.00100	0.00570	0.00100	0.00174	0.00100	0.00240	0.00100
Lead, Dissolved	6020	mg/L	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00100	0.00100
Total Suspended Solids	160.2	mg/L	104	5.00	176	5.00	6.00	5.00	18.0	5.00
Total Organic Carbon	415.1	mg/L	1.37	0.500	1.14	0.500	1.08	0.500	1.12	0.500

Sample ID			OW-1B	
Sample Date			**07/13/10**	
Sample Time			**12:20**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit
Ammonia	350.1	mg/L	0.0483	0.0300
Chromium	6010B	ug/L	12.4	3.00
Chromium, Dissolved	6010B	ug/L	< 3.00	3.00
Lead	6020	mg/L	0.00292	0.00100
Lead, Dissolved	6020	mg/L	< 0.00100	0.00100
Total Suspended Solids	160.2	mg/L	142	5.00
Total Organic Carbon	415.1	mg/L	1.46	0.500

-- = Not Applicable
mg/L = milligrams per liter
ug/L = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

August 2010
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-2E**		**MW-4A**		**MW-4A2**	
Sample Date			**08/25/10**		**08/25/10**		**08/25/10**		**08/25/10**	
Sample Time			**8:50**		**9:45**		**11:30**		**11:35**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	3.17	3.00	< 3.00	3.00	9.21	3.00	6.57	3.00
Lead	6020	mg/L	< 0.00100	0.00100	< 0.00100	0.00100	0.00444	0.00100	0.00416	0.00100
Total Suspended Solids	160.2	mg/L	15.5	5.00	24.7	6.67	78.5	5.00	303	10.0
Total Organic Carbon	415.1	mg/L	6.42	0.500	1.77	0.500	2.03	0.500	1.55	0.500

Sample ID			**MW-5A**		**OW-1A**	
Sample Date			**08/25/10**		**08/25/10**	
Sample Time			**14:00**		**14:45**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	< 3.00	3.00	< 3.00	3.00
Lead	6020	mg/L	< 0.00100	0.00100	0.00232	0.00100
Total Suspended Solids	160.2	mg/L	6.00	5.00	103	5.00
Total Organic Carbon	415.1	mg/L	1.52	0.500	1.59	0.500

-- = Not Applicable
mg/L = milligrams per liter
ug/L = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

September 2010
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2B		MW-2C		MW-4B		MW-4B2	
Sample Date			**09/09/10**		**09/09/10**		**09/09/10**		**09/09/10**	
Sample Time			**9:45**		**10:35**		**10:25**		**10:30**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	< 3.00	3.00	3.47	3.00	12.1	3.00	12.4	3.00
Lead	6020	mg/L	< 0.00100	0.00100	< 0.00100	0.00100	0.00907	0.00100	0.00707	0.00100
Total Suspended Solids	160.2	mg/L	< 5.00	5.00	13.3	5.00	247	5.00	227	10.0
Total Organic Carbon	415.1	mg/L	1.33	0.500	0.675	0.500	0.588	0.500	0.538	0.500

Sample ID			MW-5A		OW-1A	
Sample Date			**09/09/10**		**09/09/10**	
Sample Time			**13:30**		**14:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	4.74	3.00	11.7	3.00
Lead	6020	mg/L	< 0.00100	0.00100	0.00410	0.00100
Total Suspended Solids	160.2	mg/L	16.5	5.00	344	10.0
Total Organic Carbon	415.1	mg/L	0.587	0.500	< 0.500	0.500

-- = Not Applicable
mg/L = milligrams per liter
ug/L = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit

October 2010
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2D		MW-4A		MW-4C	
Sample Date			**10/26/10**		**10/26/10**		**10/26/10**		**10/26/10**	
Sample Time			**9:00**		**10:00**		**12:50**		**13:55**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	11.5	3.00	< 3.00	3.00	9.08	3.00	6.70	3.00
Lead	6020	ug/L	5.85	1.00	< 1.00	1.00	1.98	1.00	< 1.00	1.00
Total Suspended Solids	160.2	mg/L	245	10.0	19.5	5.00	108	5.00	35.0	5.00
Total Organic Carbon	415.1	mg/L	4.24	0.500	1.50	0.500	2.05	0.500	1.75	0.500

Sample ID			MW-4C2		MW-5A		OW-1A	
Sample Date			**10/26/10**		**10/26/10**		**10/26/10**	
Sample Time			**14:00**		**15:00**		**15:40**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	10.5	3.00	5.14	3.00	11.0	3.00
Lead	6020	ug/L	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Total Suspended Solids	160.2	mg/L	57.5	5.00	27.5	5.00	131	10.0
Total Organic Carbon	415.1	mg/L	1.52	0.500	1.21	0.500	1.48	0.500

-- = Not Applicable
mg/L = milligrams per liter
ug/L = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The units for Lead have been changed by the lab from mg/L to ug/L.

November 2010
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2B**		**MW-2E**		**MW-4B**		**MW-5A**	
Sample Date			**11/23/10**		**11/23/10**		**11/23/10**		**11/23/10**	
Sample Time			**8:45**		**9:40**		**10:40**		**12:35**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	< 3.00	3.00	7.71	3.00	13.1	3.00	< 3.00	3.00
Lead	6020	ug/L	< 1.00	1.00	2.90	1.00	6.73	1.00	< 1.00	1.00
Total Suspended Solids	160.2	mg/L	< 6.67	6.67	10.0	5.00	191	5.00	< 5.00	5.00
Total Organic Carbon	415.1	mg/L	3.10	0.500	1.54	0.500	1.69	0.500	1.34	0.500

Sample ID			**MW-5A2**		**OW-1B**	
Sample Date			**11/23/10**		**11/23/10**	
Sample Time			**12:40**		**13:15**	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	< 3.00	3.00	14.0	3.00
Lead	6020	ug/L	< 1.00	1.00	5.57	1.00
Total Suspended Solids	160.2	mg/L	< 5.00	5.00	50.5	5.00
Total Organic Carbon	415.1	mg/L	1.27	0.500	1.32	0.500

-- = Not Applicable
mg/L = milligrams per liter
ug/L = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The units for Lead have been changed by the lab from mg/L to ug/L.

December 2010
Groundwater Indicator Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-2C		MW-4A		MW-5A	
Sample Date			12/20/10		12/20/10		12/20/10		12/20/10	
Sample Time			9:10		9:50		10:30		13:25	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	< 3.00	3.00	< 3.00	3.00	14.6	3.00	< 3.00	3.00
Lead	6020	ug/L	< 1.00	1.00	< 1.00	1.00	3.10	1.00	< 1.00	1.00
Total Suspended Solids	160.2	mg/L	12.0	5.00	< 6.67	6.67	136	5.00	24.5	5.00
Total Organic Carbon	415.1	mg/L	3.99	0.500	3.61	0.500	2.01	0.500	1.58	0.500

Sample ID			OW-1A		OW-1A2	
Sample Date			12/20/10		12/20/10	
Sample Time			14:00		14:10	
Analyte Name	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Ammonia	350.1	mg/L	< 0.0300	0.0300	< 0.0300	0.0300
Chromium	6010B	ug/L	31.5	3.00	18.3	3.00
Lead	6020	ug/L	1.68	1.00	1.31	1.00
Total Suspended Solids	160.2	mg/L	99.5	5.00	53.0	5.00
Total Organic Carbon	415.1	mg/L	1.25	0.500	1.29	0.500

-- = Not Applicable
mg/L = milligrams per liter
ug/L = micrograms per liter
< = analyte not detected at or above the specified laboratory reporting limit
Note: The units for Lead have been changed by the lab from mg/L to ug/L.

2006 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-2A**		**MW-4A**	
Sample Date			**07/11/06**		**07/12/06**	
Sample Time			**9:00**		**8:20**	
Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,1,1,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,1-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
1,2,3-Trichloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromo-3-Chloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromoethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloropropane	8260B	ug/l	< 5	5	< 5	5
1,4-Dioxane	8260B	ug/l	< 100	100	< 100	100
2-Butanone	8260B	ug/l	< 10	10	< 10	10
2-Chlor-1,3-Butadiene	8260B	ug/l	< 5	5	< 5	5
2-Chloroethyl Vinyl Ether	8260B	ug/l	< 10	10	< 10	10
2-Hexanone	8260B	ug/l	< 10	10	< 10	10
2-Methyl-1-Propanol	8260B	ug/l	< 100	100	< 100	100
3-Chloropropene	8260B	ug/l	< 100	100	< 100	100
4-Methyl 2-Pentanone	8260B	ug/l	< 10	10	< 10	10
Acetone	8260B	ug/l	< 10	10	< 10	10
Acetonitrile	8260B	ug/l	< 100	100	< 100	100
Acrolein	8260B	ug/l	< 100	100	< 100	100
Acrylonitrile	8260B	ug/l	< 100	100	< 100	100
Benzene	8260B	ug/l	< 5	5	< 5	5
Bromodichloromethane	8260B	ug/l	< 5	5	< 5	5
Bromoform	8260B	ug/l	< 5	5	< 5	5
Bromomethane	8260B	ug/l	< 10	10	< 10	10
Carbon Disulfide	8260B	ug/l	< 5	5	< 5	5
Carbon Tetrachloride	8260B	ug/l	< 5	5	< 5	5
Chlorobenzene	8260B	ug/l	< 5	5	< 5	5
Chloroethane	8260B	ug/l	< 5	5	< 5	5
Chloroform	8260B	ug/l	< 5	5	< 5	5
Chloromethane	8260B	ug/l	< 10	10	< 10	10
Cis-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Dibromochloromethane	8260B	ug/l	< 5	5	< 5	5
Dibromomethane	8260B	ug/l	< 5	5	< 5	5
Dichlorodifluoromethane	8260B	ug/l	< 5	5	< 5	5
Ethyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Ethylbenzene	8260B	ug/l	< 5	5	< 5	5
Methyl Iodide	8260B	ug/l	< 5	5	< 5	5
Methyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Methylacrylonitrile	8260B	ug/l	< 5	5	< 5	5
Methylene Chloride	8260B	ug/l	< 5	5	< 5	5
Propionitrile	8260B	ug/l	< 5	5	< 5	5
Styrene	8260B	ug/l	< 5	5	< 5	5
Tetrachloroethene	8260B	ug/l	< 5	5	< 5	5
Toluene	8260B	ug/l	< 5	5	< 5	5
Trans-1,2-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
Trans-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Trans-1,4-Dichloro-2-Butene	8260B	ug/l	< 5	5	< 5	5
Trichloroethene	8260B	ug/l	< 5	5	< 5	5
Trichlorofluoromethane	8260B	ug/l	< 5	5	< 5	5
Vinyl Acetate	8260B	ug/l	< 10	10	< 10	10
Vinyl Chloride	8260B	ug/l	< 2	2	< 2	2
Xylenes (Total)	8260B	ug/l	< 5	5	< 5	5

2006 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/11/06		07/12/06	
Sample Time			9:00		8:20	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,2,4,5-Tetrachlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,2,4-Trichlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,2-Dichlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,3,5-Trinitrobenzene	8270C	ug/l	< 20	20	< 20	20
1,3-Dichlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,4-Dichlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,4-Naphthoquinone	8270C	ug/l	< 5	5	< 5	5
1-Naphthylamine	8270C	ug/l	< 20	20	< 20	20
2,4,5-Trichlorophenol	8270C	ug/l	< 5	5	< 5	5
2,4,6-Trichlorophenol	8270C	ug/l	< 5	5	< 5	5
2,4-Dichlorophenol	8270C	ug/l	< 5	5	< 5	5
2,4-Dimethylphenol	8270C	ug/l	< 5	5	< 5	5
2,4-Dinitrophenol	8270C	ug/l	< 25	25	< 25	25
2,4-Dinitrotoluene	8270C	ug/l	< 5	5	< 5	5
2,6-Dichlorophenol	8270C	ug/l	< 5	5	< 5	5
2,6-Dinitrotoluene	8270C	ug/l	< 5	5	< 5	5
2-Acetylaminofluorene	8270C	ug/l	< 5	5	< 5	5
2-Chloronaphthalene	8270C	ug/l	< 5	5	< 5	5
2-Chlorophenol	8270C	ug/l	< 5	5	< 5	5
2-Methylnaphthalene	8270C	ug/l	< 5	5	< 5	5
2-Methylphenol	8270C	ug/l	< 5	5	< 5	5
2-Naphthylamine	8270C	ug/l	< 5	5	< 5	5
2-Nitroaniline	8270C	ug/l	< 25	25	< 25	25
2-Nitrophenol	8270C	ug/l	< 5	5	< 5	5
2-Picoline	8270C	ug/l	< 5	5	< 5	5
3,3'-Dichlorobenzidine	8270C	ug/l	< 5	5	< 5	5
3,3'-Dimethylbenzidine	8270C	ug/l	< 20	20	< 20	20
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/l	< 5	5	< 5	5
3+4-Methylphenols	8270C	ug/l	< 5	5	< 5	5
3-Methylchloranthrene	8270C	ug/l	< 5	5	< 5	5
3-Nitroaniline	8270C	ug/l	< 25	25	< 25	25
4,6-Dinitro-2-Methylphenol	8270C	ug/l	< 25	25	< 25	25
4-Aminobiphenyl	8270C	ug/l	< 20	20	< 20	20
4-Bromophenyl Phenyl Ether	8270C	ug/l	< 5	5	< 5	5
4-Chloro-3-Methylphenol	8270C	ug/l	< 5	5	< 5	5
4-Chlorophenyl Phenyl Ether	8270C	ug/l	< 5	5	< 5	5
4-Dimethylaminoazobenzene	8270C	ug/l	< 5	5	< 5	5
4-Nitrophenol	8270C	ug/l	< 25	25	< 25	25
4-Nitroquinoline-N-Oxide	8270C	ug/l	< 20	20	< 20	20
5-Nitro-O-Toluidine	8270C	ug/l	< 5	5	< 5	5
7,12-Dimethylbenz(A)Anthracene	8270C	ug/l	< 50	50	< 50	50
A,A-Dimethylphenethylamine	8270C	ug/l	< 50	50	< 50	50
Acenaphthene	8270C	ug/l	< 5	5	< 5	5
Acenaphthylene	8270C	ug/l	< 5	5	< 5	5
Acetophenone	8270C	ug/l	< 5	5	< 5	5
Aniline	8270C	ug/l	< 10	10	< 10	10
Anthracene	8270C	ug/l	< 5	5	< 5	5
Aramite	8270C	ug/l	< 5	5	< 5	5
Benzo (A) Anthracene	8270C	ug/l	< 5	5	< 5	5
Benzo (A) Pyrene	8270C	ug/l	< 5	5	< 5	5
Benzo (B) Fluoranthene	8270C	ug/l	< 5	5	< 5	5
Benzo (G,H,I) Perylene	8270C	ug/l	< 5	5	< 5	5
Benzo (K) Fluoranthene	8270C	ug/l	< 5	5	< 5	5
Benzyl Alcohol	8270C	ug/l	< 5	5	< 5	5
Benzyl Butyl Phthalate	8270C	ug/l	< 5	5	< 5	5
Bis (2-Chloroisopropyl) Ether	8270C	ug/l	< 5	5	< 5	5
Bis(2-Chloroethoxy)Methane	8270C	ug/l	< 5	5	< 5	5
Bis(2-Chloroethyl)Ether	8270C	ug/l	< 5	5	< 5	5
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/l	< 5	5	< 5	5
Chlordecone (Kepone)	8270C	ug/l	< 20	20	< 20	20
Chlorobenzilate	8270C	ug/l	< 5	5	< 5	5

2006 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID Sample Date Sample Time			MW-2A 07/11/06 9:00		MW-4A 07/12/06 8:20	
Semi-Volatile Organic Compounds (cont'd,	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Chlorophenols	8270C	ug/l	< 5	5	< 5	5
Chrysene	8270C	ug/l	< 5	5	< 5	5
Cygon	8270C	ug/l	< 5	5	< 5	5
Diallate	8270C	ug/l	< 5	5	< 5	5
Dibenzo (A,H) Anthracene	8270C	ug/l	< 5	5	< 5	5
Dibenzofuran	8270C	ug/l	< 5	5	< 5	5
Diethyl Phthalate	8270C	ug/l	< 5	5	< 5	5
Dimethyl Phthalate	8270C	ug/l	< 5	5	< 5	5
Di-N-Butylphthalate	8270C	ug/l	< 5	5	< 5	5
Di-N-Octyl Phthalate	8270C	ug/l	< 5	5	< 5	5
Diphenylamine	8270C	ug/l	< 5	5	< 5	5
Disulfoton	8270C	ug/l	< 20	20	< 20	20
Ethyl Methanesulfonate	8270C	ug/l	< 20	20	< 20	20
Famphur	8270C	ug/l	< 10	10	< 10	10
Fluoranthene	8270C	ug/l	< 5	5	< 5	5
Fluorene	8270C	ug/l	< 5	5	< 5	5
Hexachlorobenzene	8270C	ug/l	< 5	5	< 5	5
Hexachlorobutadiene	8270C	ug/l	< 5	5	< 5	5
Hexachlorocyclopentadiene	8270C	ug/l	< 5	5	< 5	5
Hexachloroethane	8270C	ug/l	< 5	5	< 5	5
Hexachlorophene (Hcp)	8270C	ug/l	< 50	50	< 50	50
Hexachloropropene	8270C	ug/l	< 5	5	< 5	5
Indeno (1,2,3-Cd) Pyrene	8270C	ug/l	< 5	5	< 5	5
Isodrin	8270C	ug/l	< 5	5	< 5	5
Isosafrole	8270C	ug/l	< 5	5	< 5	5
M-Dinitrobenzene	8270C	ug/l	< 5	5	< 5	5
Methanamine, N-Methyl-N-Nitroso	8270C	ug/l	< 5	5	< 5	5
Methapyrilene	8270C	ug/l	< 20	20	< 20	20
Methyl Methanesulfonate	8270C	ug/l	< 5	5	< 5	5
Methyl Parathion	8270C	ug/l	< 20	20	< 20	20
Naphthalene	8270C	ug/l	< 5	5	< 5	5
Nitrobenzene	8270C	ug/l	< 5	5	< 5	5
N-Nitrosodiethylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitrosodi-N-Butylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitroso-Di-N-Propylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitrosodiphenylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitrosomorpholine	8270C	ug/l	< 5	5	< 5	5
N-Nitroso-N-Methylethylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitrosopiperidine	8270C	ug/l	< 20	20	< 20	20
N-Nitrosopyrrolidine	8270C	ug/l	< 20	20	< 20	20
O,O,O-Triethyl Phosphorothioate	8270C	ug/l	< 5	5	< 5	5
O,O-Diethyl O-Pyrazinyl Phosphorothioate	8270C	ug/l	< 5	5	< 5	5
O-Toluidine	8270C	ug/l	< 20	20	< 20	20
Parathion	8270C	ug/l	< 5	5	< 5	5
P-Chloroaniline	8270C	ug/l	< 5	5	< 5	5
Pentachlorobenzene	8270C	ug/l	< 5	5	< 5	5
Pentachloroethane	8270C	ug/l	< 5	5	< 5	5
Pentachloronitrobenzene	8270C	ug/l	< 20	20	< 20	20
Pentachlorophenol	8270C	ug/l	< 25	25	< 25	25
Phenacetin	8270C	ug/l	< 5	5	< 5	5
Phenanthrene	8270C	ug/l	< 5	5	< 5	5
Phenol	8270C	ug/l	< 5	5	< 5	5
Phorate	8270C	ug/l	< 5	5	< 5	5
P-Nitroaniline	8270C	ug/l	< 25	25	< 25	25
P-Phenylenediamine	8270C	ug/l	< 50	50	< 50	50
Propyzamide	8270C	ug/l	< 5	5	< 5	5
Pyrene	8270C	ug/l	< 5	5	< 5	5
Pyridine	8270C	ug/l	< 50	50	< 50	50
Safrole	8270C	ug/l	< 5	5	< 5	5
Sulfotep	8270C	ug/l	< 5	5	< 5	5

2006 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			**07/11/06**		**07/12/06**	
Sample Time			**9:00**		**8:20**	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/L	3.17	0.1	0.971	0.1
Antimony	6010B	mg/L	< 0.2	0.2	< 0.2	0.2
Arsenic	7060A	mg/L	0.0162	0.004	0.0146	0.004
Barium	6010B	mg/L	0.0911	0.01	0.0143	0.01
Beryllium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Cadmium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Calcium	6010B	mg/L	3.64	0.2	0.649	0.2
Chromium	6010B	ug/L	5.27	3	< 3	3
Cobalt	6010B	mg/L	< 0.02	0.02	< 0.02	0.02
Copper	6010B	mg/L	< 0.02	0.02	< 0.02	0.02
Iron	6010B	mg/L	5.15	0.1	3.37	0.1
Lead	7421	ug/L	2.07	2	< 2	2
Magnesium	6010B	mg/L	0.757	0.5	0.689	0.5
Manganese	6010B	mg/L	0.18	0.01	0.0937	0.01
Mercury	7470A	mg/L	< 0.0002	0.0002	< 0.0002	0.0002
Nickel	6010B	mg/L	< 0.04	0.04	< 0.04	0.04
Potassium	6010B	mg/L	1.91	1	< 1	1
Selenium	7740	mg/L	< 0.004	0.004	< 0.004	0.004
Silver	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Sodium	6010B	mg/L	2.44	0.5	1.63	0.5
Thallium	6010B	mg/L	< 1	1	< 1	1
Tin	6010B	mg/L	< 0.5	0.5	< 0.5	0.5
Vanadium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Zinc	6010B	mg/L	< 0.02	0.02	< 0.02	0.02

-- = Not Analyzed/Not Applicable
mg/l = milligrams per liter
ug/l = microgrmas per liter
< = analyte not detected at or above the specified laboratory reporting limit

2006 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID Sample Date Sample Time			MW-5A 07/12/06 10:50		OW-1A 07/12/06 12:05	
Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,1,1,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,1-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
1,2,3-Trichloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromo-3-Chloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromoethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloropropane	8260B	ug/l	< 5	5	< 5	5
1,4-Dioxane	8260B	ug/l	< 100	100	< 100	100
2-Butanone	8260B	ug/l	< 10	10	< 10	10
2-Chlor-1,3-Butadiene	8260B	ug/l	< 5	5	< 5	5
2-Chloroethyl Vinyl Ether	8260B	ug/l	< 10	10	< 10	10
2-Hexanone	8260B	ug/l	< 10	10	< 10	10
2-Methyl-1-Propanol	8260B	ug/l	< 100	100	< 100	100
3-Chloropropene	8260B	ug/l	< 100	100	< 100	100
4-Methyl 2-Pentanone	8260B	ug/l	< 10	10	< 10	10
Acetone	8260B	ug/l	< 10	10	< 10	10
Acetonitrile	8260B	ug/l	< 100	100	< 100	100
Acrolein	8260B	ug/l	< 100	100	< 100	100
Acrylonitrile	8260B	ug/l	< 100	100	< 100	100
Benzene	8260B	ug/l	< 5	5	< 5	5
Bromodichloromethane	8260B	ug/l	< 5	5	< 5	5
Bromoform	8260B	ug/l	< 5	5	< 5	5
Bromomethane	8260B	ug/l	< 10	10	< 10	10
Carbon Disulfide	8260B	ug/l	< 5	5	< 5	5
Carbon Tetrachloride	8260B	ug/l	< 5	5	< 5	5
Chlorobenzene	8260B	ug/l	< 5	5	< 5	5
Chloroethane	8260B	ug/l	< 5	5	< 5	5
Chloroform	8260B	ug/l	< 5	5	< 5	5
Chloromethane	8260B	ug/l	< 10	10	< 10	10
Cis-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Dibromochloromethane	8260B	ug/l	< 5	5	< 5	5
Dibromomethane	8260B	ug/l	< 5	5	< 5	5
Dichlorodifluoromethane	8260B	ug/l	< 5	5	< 5	5
Ethyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Ethylbenzene	8260B	ug/l	< 5	5	< 5	5
Methyl Iodide	8260B	ug/l	< 5	5	< 5	5
Methyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Methylacrylonitrile	8260B	ug/l	< 5	5	< 5	5
Methylene Chloride	8260B	ug/l	< 5	5	< 5	5
Propionitrile	8260B	ug/l	< 5	5	< 5	5
Styrene	8260B	ug/l	< 5	5	< 5	5
Tetrachloroethene	8260B	ug/l	< 5	5	< 5	5
Toluene	8260B	ug/l	< 5	5	< 5	5
Trans-1,2-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
Trans-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Trans-1,4-Dichloro-2-Butene	8260B	ug/l	< 5	5	< 5	5
Trichloroethene	8260B	ug/l	< 5	5	< 5	5
Trichlorofluoromethane	8260B	ug/l	< 5	5	< 5	5
Vinyl Acetate	8260B	ug/l	< 10	10	< 10	10
Vinyl Chloride	8260B	ug/l	< 2	2	< 2	2
Xylenes (Total)	8260B	ug/l	< 5	5	< 5	5

2006 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-5A**		**OW-1A**	
Sample Date			**07/12/06**		**07/12/06**	
Sample Time			**10:50**		**12:05**	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,2,4,5-Tetrachlorobenzene	8270C	ug/l	--	--	< 5.1	5.1
1,2,4-Trichlorobenzene	8270C	ug/l	--	--	< 5.1	5.1
1,2-Dichlorobenzene	8270C	ug/l	--	--	< 5.1	5.1
1,3,5-Trinitrobenzene	8270C	ug/l	--	--	< 20.4	20.4
1,3-Dichlorobenzene	8270C	ug/l	--	--	< 5.1	5.1
1,4-Dichlorobenzene	8270C	ug/l	--	--	< 5.1	5.1
1,4-Naphthoquinone	8270C	ug/l	--	--	< 5.1	5.1
1-Naphthylamine	8270C	ug/l	--	--	< 20.4	20.4
2,4,5-Trichlorophenol	8270C	ug/l	--	--	< 5.1	5.1
2,4,6-Trichlorophenol	8270C	ug/l	--	--	< 5.1	5.1
2,4-Dichlorophenol	8270C	ug/l	--	--	< 5.1	5.1
2,4-Dimethylphenol	8270C	ug/l	--	--	< 5.1	5.1
2,4-Dinitrophenol	8270C	ug/l	--	--	< 25.5	25.5
2,4-Dinitrotoluene	8270C	ug/l	--	--	< 5.1	5.1
2,6-Dichlorophenol	8270C	ug/l	--	--	< 5.1	5.1
2,6-Dinitrotoluene	8270C	ug/l	--	--	< 5.1	5.1
2-Acetylaminofluorene	8270C	ug/l	--	--	< 5.1	5.1
2-Chloronaphthalene	8270C	ug/l	--	--	< 5.1	5.1
2-Chlorophenol	8270C	ug/l	--	--	< 5.1	5.1
2-Methylnaphthalene	8270C	ug/l	--	--	< 5.1	5.1
2-Methylphenol	8270C	ug/l	--	--	< 5.1	5.1
2-Naphthylamine	8270C	ug/l	--	--	< 5.1	5.1
2-Nitroaniline	8270C	ug/l	--	--	< 25.5	25.5
2-Nitrophenol	8270C	ug/l	--	--	< 5.1	5.1
2-Picoline	8270C	ug/l	--	--	< 5.1	5.1
3,3'-Dichlorobenzidine	8270C	ug/l	--	--	< 5.1	5.1
3,3'-Dimethylbenzidine	8270C	ug/l	--	--	< 20.4	20.4
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/l	--	--	< 5.1	5.1
3+4-Methylphenols	8270C	ug/l	--	--	< 5.1	5.1
3-Methylchloranthrene	8270C	ug/l	--	--	< 5.1	5.1
3-Nitroaniline	8270C	ug/l	--	--	< 25.5	25.5
4,6-Dinitro-2-Methylphenol	8270C	ug/l	--	--	< 25.5	25.5
4-Aminobiphenyl	8270C	ug/l	--	--	< 20.4	20.4
4-Bromophenyl Phenyl Ether	8270C	ug/l	--	--	< 5.1	5.1
4-Chloro-3-Methylphenol	8270C	ug/l	--	--	< 5.1	5.1
4-Chlorophenyl Phenyl Ether	8270C	ug/l	--	--	< 5.1	5.1
4-Dimethylaminoazobenzene	8270C	ug/l	--	--	< 5.1	5.1
4-Nitrophenol	8270C	ug/l	--	--	< 25.5	25.5
4-Nitroquinoline-N-Oxide	8270C	ug/l	--	--	< 20.4	20.4
5-Nitro-O-Toluidine	8270C	ug/l	--	--	< 5.1	5.1
7,12-Dimethylbenz(A)Anthracene	8270C	ug/l	--	--	< 51	51
A,A-Dimethylphenethylamine	8270C	ug/l	--	--	< 51	51
Acenaphthene	8270C	ug/l	--	--	< 5.1	5.1
Acenaphthylene	8270C	ug/l	--	--	< 5.1	5.1
Acetophenone	8270C	ug/l	--	--	< 5.1	5.1
Aniline	8270C	ug/l	--	--	< 10.2	10.2
Anthracene	8270C	ug/l	--	--	< 5.1	5.1
Aramite	8270C	ug/l	--	--	< 5.1	5.1
Benzo (A) Anthracene	8270C	ug/l	--	--	< 5.1	5.1
Benzo (A) Pyrene	8270C	ug/l	--	--	< 5.1	5.1
Benzo (B) Fluoranthene	8270C	ug/l	--	--	< 5.1	5.1
Benzo (G,H,I) Perylene	8270C	ug/l	--	--	< 5.1	5.1
Benzo (K) Fluoranthene	8270C	ug/l	--	--	< 5.1	5.1
Benzyl Alcohol	8270C	ug/l	--	--	< 5.1	5.1
Benzyl Butyl Phthalate	8270C	ug/l	--	--	< 5.1	5.1
Bis (2-Chloroisopropyl) Ether	8270C	ug/l	--	--	< 5.1	5.1
Bis(2-Chloroethoxy)Methane	8270C	ug/l	--	--	< 5.1	5.1
Bis(2-Chloroethyl)Ether	8270C	ug/l	--	--	< 5.1	5.1
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/l	--	--	< 5.1	5.1
Chlordecone (Kepone)	8270C	ug/l	--	--	< 20.4	20.4
Chlorobenzilate	8270C	ug/l	--	--	< 5.1	5.1

2006 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/12/06		07/12/06	
Sample Time			10:50		12:05	
Semi-Volatile Organic Compounds (cont'd,	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Chlorophenols	8270C	ug/l	--	--	< 5.1	5.1
Chrysene	8270C	ug/l	--	--	< 5.1	5.1
Cygon	8270C	ug/l	--	--	< 5.1	5.1
Diallate	8270C	ug/l	--	--	< 5.1	5.1
Dibenzo (A,H) Anthracene	8270C	ug/l	--	--	< 5.1	5.1
Dibenzofuran	8270C	ug/l	--	--	< 5.1	5.1
Diethyl Phthalate	8270C	ug/l	--	--	< 5.1	5.1
Dimethyl Phthalate	8270C	ug/l	--	--	< 5.1	5.1
Di-N-Butylphthalate	8270C	ug/l	--	--	< 5.1	5.1
Di-N-Octyl Phthalate	8270C	ug/l	--	--	< 5.1	5.1
Diphenylamine	8270C	ug/l	--	--	< 5.1	5.1
Disulfoton	8270C	ug/l	--	--	< 20.4	20.4
Ethyl Methanesulfonate	8270C	ug/l	--	--	< 20.4	20.4
Famphur	8270C	ug/l	--	--	< 10.2	10.2
Fluoranthene	8270C	ug/l	--	--	< 5.1	5.1
Fluorene	8270C	ug/l	--	--	< 5.1	5.1
Hexachlorobenzene	8270C	ug/l	--	--	< 5.1	5.1
Hexachlorobutadiene	8270C	ug/l	--	--	< 5.1	5.1
Hexachlorocyclopentadiene	8270C	ug/l	--	--	< 5.1	5.1
Hexachloroethane	8270C	ug/l	--	--	< 5.1	5.1
Hexachlorophene (Hcp)	8270C	ug/l	--	--	< 51	51
Hexachloropropene	8270C	ug/l	--	--	< 5.1	5.1
Indeno (1,2,3-Cd) Pyrene	8270C	ug/l	--	--	< 5.1	5.1
Isodrin	8270C	ug/l	--	--	< 5.1	5.1
Isosafrole	8270C	ug/l	--	--	< 5.1	5.1
M-Dinitrobenzene	8270C	ug/l	--	--	< 5	5
Methanamine, N-Methyl-N-Nitroso	8270C	ug/l	--	--	< 5.1	5.1
Methapyrilene	8270C	ug/l	--	--	< 20.4	20.4
Methyl Methanesulfonate	8270C	ug/l	--	--	< 5.1	5.1
Methyl Parathion	8270C	ug/l	--	--	< 20.4	20.4
Naphthalene	8270C	ug/l	--	--	< 5.1	5.1
Nitrobenzene	8270C	ug/l	--	--	< 5.1	5.1
N-Nitrosodiethylamine	8270C	ug/l	--	--	< 5.1	5.1
N-Nitrosodi-N-Butylamine	8270C	ug/l	--	--	< 5.1	5.1
N-Nitroso-Di-N-Propylamine	8270C	ug/l	--	--	< 5.1	5.1
N-Nitrosodiphenylamine	8270C	ug/l	--	--	< 5.1	5.1
N-Nitrosomorpholine	8270C	ug/l	--	--	< 5.1	5.1
N-Nitroso-N-Methylethylamine	8270C	ug/l	--	--	< 5.1	5.1
N-Nitrosopiperidine	8270C	ug/l	--	--	< 20.4	20.4
N-Nitrosopyrrolidine	8270C	ug/l	--	--	< 20.4	20.4
O,O,O-Triethyl Phosphorothioate	8270C	ug/l	--	--	< 5.1	5.1
O,O-Diethyl O-Pyrazinyl Phosphorothioate	8270C	ug/l	--	--	< 5.1	5.1
O-Toluidine	8270C	ug/l	--	--	< 20.4	20.4
Parathion	8270C	ug/l	--	--	< 5.1	5.1
P-Chloroaniline	8270C	ug/l	--	--	< 5.1	5.1
Pentachlorobenzene	8270C	ug/l	--	--	< 5.1	5.1
Pentachloroethane	8270C	ug/l	--	--	< 5.1	5.1
Pentachloronitrobenzene	8270C	ug/l	--	--	< 20.4	20.4
Pentachlorophenol	8270C	ug/l	--	--	< 25.5	25.5
Phenacetin	8270C	ug/l	--	--	< 5.1	5.1
Phenanthrene	8270C	ug/l	--	--	< 5.1	5.1
Phenol	8270C	ug/l	--	--	< 5.1	5.1
Phorate	8270C	ug/l	--	--	< 5.1	5.1
P-Nitroaniline	8270C	ug/l	--	--	< 25.5	25.5
P-Phenylenediamine	8270C	ug/l	--	--	< 51	51
Propyzamide	8270C	ug/l	--	--	< 5.1	5.1
Pyrene	8270C	ug/l	--	--	< 5.1	5.1
Pyridine	8270C	ug/l	--	--	< 51	51
Safrole	8270C	ug/l	--	--	< 5.1	5.1
Sulfotep	8270C	ug/l	--	--	< 5.1	5.1

2006 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			**MW-5A**		**OW-1A**	
Sample Date			**07/12/06**		**07/12/06**	
Sample Time			**10:50**		**12:05**	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/L	0.112	0.1	16.3	0.1
Antimony	6010B	mg/L	< 0.2	0.2	< 0.2	0.2
Arsenic	7060A	mg/L	< 0.004	0.004	0.0165	0.004
Barium	6010B	mg/L	< 0.01	0.01	0.165	0.01
Beryllium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Cadmium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Calcium	6010B	mg/L	0.77	0.2	5.71	0.2
Chromium	6010B	ug/L	< 3	3	54.6	3
Cobalt	6010B	mg/L	< 0.02	0.02	< 0.02	0.02
Copper	6010B	mg/L	< 0.02	0.02	0.0328	0.02
Iron	6010B	mg/L	0.158	0.1	37.5	0.1
Lead	7421	ug/L	< 2	2	10.9	2
Magnesium	6010B	mg/L	0.655	0.5	4.36	0.5
Manganese	6010B	mg/L	0.0113	0.01	0.892	0.01
Mercury	7470A	mg/L	< 0.0002	0.0002	< 0.0002	0.0002
Nickel	6010B	mg/L	< 0.04	0.04	0.0492	0.04
Potassium	6010B	mg/L	< 1	1	1.37	1
Selenium	7740	mg/L	< 0.004	0.004	< 0.004	0.004
Silver	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Sodium	6010B	mg/L	1.78	0.5	1.83	0.5
Thallium	6010B	mg/L	< 1	1	< 1	1
Tin	6010B	mg/L	< 0.5	0.5	< 0.5	0.5
Vanadium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Zinc	6010B	mg/L	< 0.02	0.02	0.113	0.02

-- = Not Analyzed/Not Applicable
mg/l = milligrams per liter
ug/l = microgrmas per liter
< = analyte not detected at or above the specified laboratory reporting limit

2007 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/18/07		07/18/07	
Sample Time			8:45		8:15	
Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,1,1,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,1-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
1,2,3-Trichloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromo-3-Chloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromoethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloropropane	8260B	ug/l	< 5	5	< 5	5
1,4-Dioxane	8260B	ug/l	< 100	100	< 100	100
2-Butanone	8260B	ug/l	< 10	10	< 10	10
2-Chlor-1,3-Butadiene	8260B	ug/l	< 5	5	< 5	5
2-Chloroethyl Vinyl Ether	8260B	ug/l	< 10	10	< 10	10
2-Hexanone	8260B	ug/l	< 10	10	< 10	10
2-Methyl-1-Propanol	8260B	ug/l	< 100	100	< 100	100
3-Chloropropene	8260B	ug/l	< 100	100	< 100	100
4-Methyl 2-Pentanone	8260B	ug/l	< 10	10	< 10	10
Acetone	8260B	ug/l	< 10	10	< 10	10
Acetonitrile	8260B	ug/l	< 100	100	< 100	100
Acrolein	8260B	ug/l	< 100	100	< 100	100
Acrylonitrile	8260B	ug/l	< 100	100	< 100	100
Benzene	8260B	ug/l	< 5	5	< 5	5
Bromodichloromethane	8260B	ug/l	< 5	5	< 5	5
Bromoform	8260B	ug/l	< 5	5	< 5	5
Bromomethane	8260B	ug/l	< 10	10	< 10	10
Carbon Disulfide	8260B	ug/l	< 5	5	< 5	5
Carbon Tetrachloride	8260B	ug/l	< 5	5	< 5	5
Chlorobenzene	8260B	ug/l	< 5	5	< 5	5
Chloroethane	8260B	ug/l	< 5	5	< 5	5
Chloroform	8260B	ug/l	< 5	5	< 5	5
Chloromethane	8260B	ug/l	< 10	10	< 10	10
Cis-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Dibromochloromethane	8260B	ug/l	< 5	5	< 5	5
Dibromomethane	8260B	ug/l	< 5	5	< 5	5
Dichlorodifluoromethane	8260B	ug/l	< 5	5	< 5	5
Ethyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Ethylbenzene	8260B	ug/l	< 5	5	< 5	5
Methyl Iodide	8260B	ug/l	< 5	5	< 5	5
Methyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Methylacrylonitrile	8260B	ug/l	< 5	5	< 5	5
Methylene Chloride	8260B	ug/l	< 5	5	< 5	5
Propionitrile	8260B	ug/l	< 5	5	< 5	5
Styrene	8260B	ug/l	< 5	5	< 5	5
Tetrachloroethene	8260B	ug/l	< 5	5	< 5	5
Toluene	8260B	ug/l	< 5	5	< 5	5
Trans-1,2-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
Trans-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Trans-1,4-Dichloro-2-Butene	8260B	ug/l	< 5	5	< 5	5
Trichloroethene	8260B	ug/l	< 5	5	< 5	5
Trichlorofluoromethane	8260B	ug/l	< 5	5	< 5	5
Vinyl Acetate	8260B	ug/l	< 10	10	< 10	10
Vinyl Chloride	8260B	ug/l	< 2	2	< 2	2
Xylenes (Total)	8260B	ug/l	< 5	5	< 5	5

2007 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/18/07		07/18/07	
Sample Time			8:45		8:15	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,2,4,5-Tetrachlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,2,4-Trichlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,2-Dichlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,3,5-Trinitrobenzene	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
1,3-Dichlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,4-Dichlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,4-Naphthoquinone	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1-Naphthylamine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
2,4,5-Trichlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,4,6-Trichlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,4-Dichlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,4-Dimethylphenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,4-Dinitrophenol	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
2,4-Dinitrotoluene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,6-Dichlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,6-Dinitrotoluene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Acetylaminofluorene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Chloronaphthalene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Chlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Methylnaphthalene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Methylphenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Naphthylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Nitroaniline	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
2-Nitrophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Picoline	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3,3'-Dichlorobenzidine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3,3'-Dimethylbenzidine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3+4-Methylphenols	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3-Methylchloranthrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3-Nitroaniline	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
4,6-Dinitro-2-Methylphenol	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
4-Aminobiphenyl	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
4-Bromophenyl Phenyl Ether	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
4-Chloro-3-Methylphenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
4-Chlorophenyl Phenyl Ether	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
4-Dimethylaminoazobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
4-Nitrophenol	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
4-Nitroquinoline-N-Oxide	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
5-Nitro-O-Toluidine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
7,12-Dimethylbenz(A)Anthracene	8270C	ug/l	< 51	51	< 51	51
A,A-Dimethylphenethylamine	8270C	ug/l	< 51	51	< 51	51
Acenaphthene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Acenaphthylene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Acetophenone	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Aniline	8270C	ug/l	< 10.2	10.2	< 10.2	10.2
Anthracene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Aramite	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (A) Anthracene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (A) Pyrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (B) Fluoranthene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (G,H,I) Perylene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (K) Fluoranthene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzyl Alcohol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzyl Butyl Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Bis (2-Chloroisopropyl) Ether	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Bis(2-Chloroethoxy)Methane	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Bis(2-Chloroethyl)Ether	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Chlordecone (Kepone)	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Chlorobenzilate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1

2007 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/18/07		07/18/07	
Sample Time			8:45		8:15	
Semi-Volatile Organic Compounds (cont'd,	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Chlorophenols	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Chrysene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Cygon	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Diallate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Dibenzo (A,H) Anthracene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Dibenzofuran	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Diethyl Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Dimethyl Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Di-N-Butylphthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Di-N-Octyl Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Diphenylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Disulfoton	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Ethyl Methanesulfonate	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Famphur	8270C	ug/l	< 10.2	10.2	< 10.2	10.2
Fluoranthene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Fluorene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachlorobutadiene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachlorocyclopentadiene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachloroethane	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachlorophene (Hcp)	8270C	ug/l	< 51	51	< 51	51
Hexachloropropene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Indeno (1,2,3-Cd) Pyrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Isodrin	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Isosafrole	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
M-Dinitrobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Methanamine, N-Methyl-N-Nitroso	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Methapyrilene	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Methyl Methanesulfonate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Methyl Parathion	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Naphthalene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Nitrobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosodiethylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosodi-N-Butylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitroso-Di-N-Propylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosodiphenylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosomorpholine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitroso-N-Methylethylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosopiperidine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
N-Nitrosopyrrolidine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
O,O,O-Triethyl Phosphorothioate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
O,O-Diethyl O-Pyrazinyl Phosphorothioate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
O-Toluidine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Parathion	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
P-Chloroaniline	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pentachlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pentachloroethane	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pentachloronitrobenzene	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Pentachlorophenol	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
Phenacetin	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Phenanthrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Phenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Phorate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
P-Nitroaniline	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
P-Phenylenediamine	8270C	ug/l	< 51	51	< 51	51
Propyzamide	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pyrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pyridine	8270C	ug/l	< 51	51	< 51	51
Safrole	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Sulfotep	8270C	ug/l	< 5.1	5.1	< 5.1	5.1

2007 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/18/07		07/18/07	
Sample Time			8:45		8:15	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/L	< 0.1	0.1	0.117	0.1
Antimony	6010B	mg/L	< 0.2	0.2	< 0.2	0.2
Arsenic	7060A	mg/L	< 0.004	0.004	0.0553	0.004
Barium	6010B	mg/L	0.022	0.01	0.0143	0.01
Beryllium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Cadmium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Calcium	6010B	mg/L	0.423	0.2	0.622	0.2
Cobalt	6010B	mg/L	< 0.02	0.02	< 0.02	0.02
Copper	6010B	mg/L	< 0.02	0.02	< 0.02	0.02
Iron	6010B	mg/L	< 0.1	0.1	0.151	0.1
Magnesium	6010B	mg/L	< 0.5	0.5	0.788	0.5
Manganese	6010B	mg/L	0.0639	0.01	0.0609	0.01
Mercury	7470A	mg/L	< 0.0002	0.0002	< 0.0002	0.000245
Nickel	6010B	mg/L	< 0.04	0.04	< 0.04	0.04
Potassium	6010B	mg/L	< 1	1	< 1	1
Selenium	7740	mg/L	< 0.004	0.004	< 0.004	0.004
Silver	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Sodium	6010B	mg/L	1.83	0.5	1.39	0.5
Thallium	6010B	mg/L	< 1	1	< 1	1
Tin	6010B	mg/L	< 0.5	0.5	< 0.5	0.5
Vanadium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Zinc	6010B	mg/L	< 0.02	0.02	< 0.02	0.02

-- = Not Analyzed/Not Applicable
mg/l = milligrams per liter
ug/l = microgrmas per liter
< = analyte not detected at or above the specified laboratory reporting limit

2007 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/18/07		07/18/07	
Sample Time			11:00		11:35	
Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,1,1,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,1-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
1,2,3-Trichloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromo-3-Chloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromoethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloropropane	8260B	ug/l	< 5	5	< 5	5
1,4-Dioxane	8260B	ug/l	< 100	100	< 100	100
2-Butanone	8260B	ug/l	< 10	10	< 10	10
2-Chlor-1,3-Butadiene	8260B	ug/l	< 5	5	< 5	5
2-Chloroethyl Vinyl Ether	8260B	ug/l	< 10	10	< 10	10
2-Hexanone	8260B	ug/l	< 10	10	< 10	10
2-Methyl-1-Propanol	8260B	ug/l	< 100	100	< 100	100
3-Chloropropene	8260B	ug/l	< 100	100	< 100	100
4-Methyl 2-Pentanone	8260B	ug/l	< 10	10	< 10	10
Acetone	8260B	ug/l	< 10	10	< 10	10
Acetonitrile	8260B	ug/l	< 100	100	< 100	100
Acrolein	8260B	ug/l	< 100	100	< 100	100
Acrylonitrile	8260B	ug/l	< 100	100	< 100	100
Benzene	8260B	ug/l	< 5	5	< 5	5
Bromodichloromethane	8260B	ug/l	< 5	5	< 5	5
Bromoform	8260B	ug/l	< 5	5	< 5	5
Bromomethane	8260B	ug/l	< 10	10	< 10	10
Carbon Disulfide	8260B	ug/l	< 5	5	< 5	5
Carbon Tetrachloride	8260B	ug/l	< 5	5	< 5	5
Chlorobenzene	8260B	ug/l	< 5	5	< 5	5
Chloroethane	8260B	ug/l	< 5	5	< 5	5
Chloroform	8260B	ug/l	< 5	5	< 5	5
Chloromethane	8260B	ug/l	< 10	10	< 10	10
Cis-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Dibromochloromethane	8260B	ug/l	< 5	5	< 5	5
Dibromomethane	8260B	ug/l	< 5	5	< 5	5
Dichlorodifluoromethane	8260B	ug/l	< 5	5	< 5	5
Ethyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Ethylbenzene	8260B	ug/l	< 5	5	< 5	5
Methyl Iodide	8260B	ug/l	< 5	5	< 5	5
Methyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Methylacrylonitrile	8260B	ug/l	< 5	5	< 5	5
Methylene Chloride	8260B	ug/l	< 5	5	< 5	5
Propionitrile	8260B	ug/l	< 5	5	< 5	5
Styrene	8260B	ug/l	< 5	5	< 5	5
Tetrachloroethene	8260B	ug/l	< 5	5	< 5	5
Toluene	8260B	ug/l	< 5	5	< 5	5
Trans-1,2-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
Trans-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Trans-1,4-Dichloro-2-Butene	8260B	ug/l	< 5	5	< 5	5
Trichloroethene	8260B	ug/l	< 5	5	< 5	5
Trichlorofluoromethane	8260B	ug/l	< 5	5	< 5	5
Vinyl Acetate	8260B	ug/l	< 10	10	< 10	10
Vinyl Chloride	8260B	ug/l	< 2	2	< 2	2
Xylenes (Total)	8260B	ug/l	< 5	5	< 5	5

2007 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/18/07		07/18/07	
Sample Time			11:00		11:35	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,2,4,5-Tetrachlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,2,4-Trichlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,2-Dichlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,3,5-Trinitrobenzene	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
1,3-Dichlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,4-Dichlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,4-Naphthoquinone	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1-Naphthylamine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
2,4,5-Trichlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,4,6-Trichlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,4-Dichlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,4-Dimethylphenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,4-Dinitrophenol	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
2,4-Dinitrotoluene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,6-Dichlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,6-Dinitrotoluene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Acetylaminofluorene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Chloronaphthalene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Chlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Methylnaphthalene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Methylphenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Naphthylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Nitroaniline	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
2-Nitrophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Picoline	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3,3'-Dichlorobenzidine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3,3'-Dimethylbenzidine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3+4-Methylphenols	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3-Methylchloranthrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3-Nitroaniline	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
4,6-Dinitro-2-Methylphenol	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
4-Aminobiphenyl	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
4-Bromophenyl Phenyl Ether	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
4-Chloro-3-Methylphenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
4-Chlorophenyl Phenyl Ether	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
4-Dimethylaminoazobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
4-Nitrophenol	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
4-Nitroquinoline-N-Oxide	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
5-Nitro-O-Toluidine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
7,12-Dimethylbenz(A)Anthracene	8270C	ug/l	< 51	51	< 51	51
A,A-Dimethylphenethylamine	8270C	ug/l	< 51	51	< 51	51
Acenaphthene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Acenaphthylene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Acetophenone	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Aniline	8270C	ug/l	< 10.2	10.2	< 10.2	10.2
Anthracene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Aramite	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (A) Anthracene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (A) Pyrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (B) Fluoranthene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (G,H,I) Perylene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (K) Fluoranthene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzyl Alcohol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzyl Butyl Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Bis (2-Chloroisopropyl) Ether	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Bis(2-Chloroethoxy)Methane	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Bis(2-Chloroethyl)Ether	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Chlordecone (Kepone)	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Chlorobenzilate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1

2007 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/18/07		07/18/07	
Sample Time			11:00		11:35	
Semi-Volatile Organic Compounds (cont'd,	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Chlorophenols	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Chrysene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Cygon	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Diallate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Dibenzo (A,H) Anthracene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Dibenzofuran	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Diethyl Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Dimethyl Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Di-N-Butylphthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Di-N-Octyl Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Diphenylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Disulfoton	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Ethyl Methanesulfonate	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Famphur	8270C	ug/l	< 10.2	10.2	< 10.2	10.2
Fluoranthene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Fluorene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachlorobutadiene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachlorocyclopentadiene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachloroethane	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachlorophene (Hcp)	8270C	ug/l	< 51	51	< 51	51
Hexachloropropene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Indeno (1,2,3-Cd) Pyrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Isodrin	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Isosafrole	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
M-Dinitrobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Methanamine, N-Methyl-N-Nitroso	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Methapyrilene	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Methyl Methanesulfonate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Methyl Parathion	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Naphthalene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Nitrobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosodiethylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosodi-N-Butylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitroso-Di-N-Propylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosodiphenylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosomorpholine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitroso-N-Methylethylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosopiperidine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
N-Nitrosopyrrolidine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
O,O,O-Triethyl Phosphorothioate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
O,O-Diethyl O-Pyrazinyl Phosphorothioate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
O-Toluidine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Parathion	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
P-Chloroaniline	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pentachlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pentachloroethane	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pentachloronitrobenzene	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Pentachlorophenol	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
Phenacetin	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Phenanthrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Phenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Phorate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
P-Nitroaniline	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
P-Phenylenediamine	8270C	ug/l	< 51	51	< 51	51
Propyzamide	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pyrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pyridine	8270C	ug/l	< 51	51	< 51	51
Safrole	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Sulfotep	8270C	ug/l	< 5.1	5.1	< 5.1	5.1

2007 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/18/07		07/18/07	
Sample Time			11:00		11:35	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/L	< 0.1	0.1	0.158	0.1
Antimony	6010B	mg/L	< 0.2	0.2	< 0.2	0.2
Arsenic	7060A	mg/L	< 0.004	0.004	0.0632	0.004
Barium	6010B	mg/L	< 0.01	0.01	0.0111	0.01
Beryllium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Cadmium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Calcium	6010B	mg/L	0.716	0.2	0.543	0.2
Cobalt	6010B	mg/L	< 0.02	0.02	< 0.02	0.02
Copper	6010B	mg/L	< 0.02	0.02	< 0.02	0.02
Iron	6010B	mg/L	< 0.1	0.1	0.126	0.1
Magnesium	6010B	mg/L	0.738	0.5	0.573	0.5
Manganese	6010B	mg/L	< 0.01	0.01	0.0376	0.01
Mercury	7470A	mg/L	< 0.0002	0.0002	< 0.0002	0.0002
Nickel	6010B	mg/L	< 0.04	0.04	< 0.04	0.04
Potassium	6010B	mg/L	< 1	1	< 1	1
Selenium	7740	mg/L	< 0.004	0.004	< 0.004	0.004
Silver	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Sodium	6010B	mg/L	1.54	0.5	1.41	0.5
Thallium	6010B	mg/L	< 1	1	< 1	1
Tin	6010B	mg/L	< 0.5	0.5	< 0.5	0.5
Vanadium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Zinc	6010B	mg/L	< 0.02	0.02	< 0.02	0.02

-- = Not Analyzed/Not Applicable
mg/l = milligrams per liter
ug/l = microgrmas per liter
< = analyte not detected at or above the specified laboratory reporting limit

2008 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/30/08		07/31/08	
Sample Time			8:30		8:20	
Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,1,1,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,1-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
1,2,3-Trichloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromo-3-Chloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromoethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloropropane	8260B	ug/l	< 5	5	< 5	5
1,4-Dioxane	8260B	ug/l	< 100	100	< 100	100
2-Butanone	8260B	ug/l	< 10	10	< 10	10
2-Chlor-1,3-Butadiene	8260B	ug/l	< 5	5	< 5	5
2-Chloroethyl Vinyl Ether	8260B	ug/l	< 10	10	< 10	10
2-Hexanone	8260B	ug/l	< 10	10	< 10	10
2-Methyl-1-Propanol	8260B	ug/l	< 100	100	< 100	100
3-Chloropropene	8260B	ug/l	< 100	100	< 100	100
4-Methyl 2-Pentanone	8260B	ug/l	< 10	10	< 10	10
Acetone	8260B	ug/l	< 10	10	< 10	10
Acetonitrile	8260B	ug/l	< 100	100	< 100	100
Acrolein	8260B	ug/l	< 100	100	< 100	100
Acrylonitrile	8260B	ug/l	< 100	100	< 100	100
Benzene	8260B	ug/l	< 5	5	< 5	5
Bromodichloromethane	8260B	ug/l	< 5	5	< 5	5
Bromoform	8260B	ug/l	< 5	5	< 5	5
Bromomethane	8260B	ug/l	< 10	10	< 10	10
Carbon Disulfide	8260B	ug/l	< 5	5	< 5	5
Carbon Tetrachloride	8260B	ug/l	< 5	5	< 5	5
Chlorobenzene	8260B	ug/l	< 5	5	< 5	5
Chloroethane	8260B	ug/l	< 5	5	< 5	5
Chloroform	8260B	ug/l	< 5	5	< 5	5
Chloromethane	8260B	ug/l	< 10	10	< 10	10
Cis-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Dibromochloromethane	8260B	ug/l	< 5	5	< 5	5
Dibromomethane	8260B	ug/l	< 5	5	< 5	5
Dichlorodifluoromethane	8260B	ug/l	< 5	5	< 5	5
Ethyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Ethylbenzene	8260B	ug/l	< 5	5	< 5	5
Methyl Iodide	8260B	ug/l	< 5	5	< 5	5
Methyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Methylacrylonitrile	8260B	ug/l	< 5	5	< 5	5
Methylene Chloride	8260B	ug/l	< 5	5	< 5	5
Propionitrile	8260B	ug/l	< 5	5	< 5	5
Styrene	8260B	ug/l	< 5	5	< 5	5
Tetrachloroethene	8260B	ug/l	< 5	5	< 5	5
Toluene	8260B	ug/l	< 5	5	< 5	5
Trans-1,2-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
Trans-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Trans-1,4-Dichloro-2-Butene	8260B	ug/l	< 5	5	< 5	5
Trichloroethene	8260B	ug/l	< 5	5	< 5	5
Trichlorofluoromethane	8260B	ug/l	< 5	5	< 5	5
Vinyl Acetate	8260B	ug/l	< 10	10	< 10	10
Vinyl Chloride	8260B	ug/l	< 2	2	< 2	2
Xylenes (Total)	8260B	ug/l	< 5	5	< 5	5

Sample ID			MW-2A		MW-4A	
Sample Date			07/30/08		07/31/08	
Sample Time			8:30		8:20	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,2,4,5-Tetrachlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,2,4-Trichlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,2-Dichlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,3,5-Trinitrobenzene	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
1,3-Dichlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,4-Dichlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1,4-Naphthoquinone	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
1-Naphthylamine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
2,4,5-Trichlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,4,6-Trichlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,4-Dichlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,4-Dimethylphenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,4-Dinitrophenol	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
2,4-Dinitrotoluene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,6-Dichlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2,6-Dinitrotoluene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Acetylaminofluorene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Chloronaphthalene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Chlorophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Methylnaphthalene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Methylphenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Naphthylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Nitroaniline	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
2-Nitrophenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
2-Picoline	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3,3'-Dichlorobenzidine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3,3'-Dimethylbenzidine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3+4-Methylphenols	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3-Methylchloranthrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
3-Nitroaniline	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
4,6-Dinitro-2-Methylphenol	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
4-Aminobiphenyl	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
4-Bromophenyl Phenyl Ether	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
4-Chloro-3-Methylphenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
4-Chlorophenyl Phenyl Ether	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
4-Dimethylaminoazobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
4-Nitrophenol	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
4-Nitroquinoline-N-Oxide	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
5-Nitro-O-Toluidine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
7,12-Dimethylbenz(A)Anthracene	8270C	ug/l	< 51	51	< 51	51
A,A-Dimethylphenethylamine	8270C	ug/l	< 51	51	< 51	51
Acenaphthene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Acenaphthylene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Acetophenone	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Aniline	8270C	ug/l	< 10.2	10.2	< 10.2	10.2
Anthracene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Aramite	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (A) Anthracene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (A) Pyrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (B) Fluoranthene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (G,H,I) Perylene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzo (K) Fluoranthene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzyl Alcohol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Benzyl Butyl Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Bis (2-Chloroisopropyl) Ether	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Bis(2-Chloroethoxy)Methane	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Bis(2-Chloroethyl)Ether	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Chlordecone (Kepone)	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Chlorobenzilate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1

2008 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/30/08		07/31/08	
Sample Time			8:30		8:20	
Semi-Volatile Organic Compounds (cont'd)	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Chlorophenols	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Chrysene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Cygon	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Diallate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Dibenzo (A,H) Anthracene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Dibenzofuran	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Diethyl Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Dimethyl Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Di-N-Butylphthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Di-N-Octyl Phthalate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Diphenylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Disulfoton	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Ethyl Methanesulfonate	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Famphur	8270C	ug/l	< 10.2	10.2	< 10.2	10.2
Fluoranthene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Fluorene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachlorobutadiene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachlorocyclopentadiene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachloroethane	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Hexachlorophene (Hcp)	8270C	ug/l	< 51	51	< 51	51
Hexachloropropene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Indeno (1,2,3-Cd) Pyrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Isodrin	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Isosafrole	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
M-Dinitrobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Methanamine, N-Methyl-N-Nitroso	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Methapyrilene	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Methyl Methanesulfonate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Methyl Parathion	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Naphthalene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Nitrobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosodiethylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosodi-N-Butylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitroso-Di-N-Propylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosodiphenylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosomorpholine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitroso-N-Methylethylamine	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
N-Nitrosopiperidine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
N-Nitrosopyrrolidine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
O,O,O-Triethyl Phosphorothioate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
O,O-Diethyl O-Pyrazinyl Phosphorothioate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
O-Toluidine	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Parathion	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
P-Chloroaniline	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pentachlorobenzene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pentachloroethane	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pentachloronitrobenzene	8270C	ug/l	< 20.4	20.4	< 20.4	20.4
Pentachlorophenol	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
Phenacetin	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Phenanthrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Phenol	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Phorate	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
P-Nitroaniline	8270C	ug/l	< 25.5	25.5	< 25.5	25.5
P-Phenylenediamine	8270C	ug/l	< 51	51	< 51	51
Propyzamide	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pyrene	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Pyridine	8270C	ug/l	< 51	51	< 51	51
Safrole	8270C	ug/l	< 5.1	5.1	< 5.1	5.1
Sulfotep	8270C	ug/l	< 5.1	5.1	< 5.1	5.1

2008 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/30/08		07/31/08	
Sample Time			8:30		8:20	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	ug/L	279	100	1570	100
Antimony	6010B	ug/L	< 200	200	< 200	200
Arsenic	7060A	mg/L	< 0.004	0.004	0.0674	0.004
Barium	6010B	ug/L	24.6	10	57.8	10
Beryllium	6010B	ug/L	< 10	10	< 10	10
Cadmium	6010B	ug/L	< 10	10	< 10	10
Calcium	6010B	ug/L	446	200	3400	200
Cobalt	6010B	ug/L	< 20	20	< 20	20
Copper	6010B	ug/L	< 20	20	< 20	20
Iron	6010B	ug/L	339	100	4150	100
Magnesium	6010B	ug/L	< 500	500	893	500
Manganese	6010B	ug/L	55.1	10	113	10
Mercury	7470A	mg/L	< 0.0002	0.0002	< 0.0002	0.0002
Nickel	6010B	ug/L	< 40	40	< 40	40
Potassium	6010B	ug/L	< 1000	1000	< 1000	1000
Selenium	7740	mg/L	< 0.004	0.004	< 0.004	0.004
Silver	6010B	ug/L	< 10	10	< 10	10
Sodium	6010B	ug/L	1800	500	1590	500
Thallium	6010B	ug/L	< 1000	1000	< 1000	1000
Tin	6010B	ug/L	< 500	500	< 500	500
Vanadium	6010B	ug/L	< 10	10	< 10	10
Zinc	6010B	ug/L	< 20	20	< 20	20

-- = Not Analyzed/Not Applicable
mg/l = milligrams per liter
ug/l = microgrmas per liter
< = analyte not detected at or above the specified laboratory reporting limit

2008 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/31/08		07/31/08	
Sample Time			11:55		12:35	
Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,1,1,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,1-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
1,2,3-Trichloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromo-3-Chloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromoethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloropropane	8260B	ug/l	< 5	5	< 5	5
1,4-Dioxane	8260B	ug/l	< 100	100	< 100	100
2-Butanone	8260B	ug/l	< 10	10	< 10	10
2-Chlor-1,3-Butadiene	8260B	ug/l	< 5	5	< 5	5
2-Chloroethyl Vinyl Ether	8260B	ug/l	< 10	10	< 10	10
2-Hexanone	8260B	ug/l	< 10	10	< 10	10
2-Methyl-1-Propanol	8260B	ug/l	< 100	100	< 100	100
3-Chloropropene	8260B	ug/l	< 100	100	< 100	100
4-Methyl 2-Pentanone	8260B	ug/l	< 10	10	< 10	10
Acetone	8260B	ug/l	< 10	10	< 10	10
Acetonitrile	8260B	ug/l	< 100	100	< 100	100
Acrolein	8260B	ug/l	< 100	100	< 100	100
Acrylonitrile	8260B	ug/l	< 100	100	< 100	100
Benzene	8260B	ug/l	< 5	5	< 5	5
Bromodichloromethane	8260B	ug/l	< 5	5	< 5	5
Bromoform	8260B	ug/l	< 5	5	< 5	5
Bromomethane	8260B	ug/l	< 10	10	< 10	10
Carbon Disulfide	8260B	ug/l	< 5	5	< 5	5
Carbon Tetrachloride	8260B	ug/l	< 5	5	< 5	5
Chlorobenzene	8260B	ug/l	< 5	5	< 5	5
Chloroethane	8260B	ug/l	< 5	5	< 5	5
Chloroform	8260B	ug/l	< 5	5	< 5	5
Chloromethane	8260B	ug/l	< 10	10	< 10	10
Cis-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Dibromochloromethane	8260B	ug/l	< 5	5	< 5	5
Dibromomethane	8260B	ug/l	< 5	5	< 5	5
Dichlorodifluoromethane	8260B	ug/l	< 5	5	< 5	5
Ethyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Ethylbenzene	8260B	ug/l	< 5	5	< 5	5
Methyl Iodide	8260B	ug/l	< 5	5	< 5	5
Methyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Methylacrylonitrile	8260B	ug/l	< 5	5	< 5	5
Methylene Chloride	8260B	ug/l	< 5	5	< 5	5
Propionitrile	8260B	ug/l	< 5	5	< 5	5
Styrene	8260B	ug/l	< 5	5	< 5	5
Tetrachloroethene	8260B	ug/l	< 5	5	< 5	5
Toluene	8260B	ug/l	< 5	5	< 5	5
Trans-1,2-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
Trans-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Trans-1,4-Dichloro-2-Butene	8260B	ug/l	< 5	5	< 5	5
Trichloroethene	8260B	ug/l	< 5	5	< 5	5
Trichlorofluoromethane	8260B	ug/l	< 5	5	< 5	5
Vinyl Acetate	8260B	ug/l	< 10	10	< 10	10
Vinyl Chloride	8260B	ug/l	< 2	2	< 2	2
Xylenes (Total)	8260B	ug/l	< 5	5	< 5	5

2008 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/31/08		07/31/08	
Sample Time			11:55		12:35	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,2,4,5-Tetrachlorobenzene	8270C	ug/l	< 5.32	5.32	< 5	5
1,2,4-Trichlorobenzene	8270C	ug/l	< 5.32	5.32	< 5	5
1,2-Dichlorobenzene	8270C	ug/l	< 5.32	5.32	< 5	5
1,3,5-Trinitrobenzene	8270C	ug/l	< 21.3	21.3	< 20	20
1,3-Dichlorobenzene	8270C	ug/l	< 5.32	5.32	< 5	5
1,4-Dichlorobenzene	8270C	ug/l	< 5.32	5.32	< 5	5
1,4-Naphthoquinone	8270C	ug/l	< 5.32	5.32	< 5	5
1-Naphthylamine	8270C	ug/l	< 21.3	21.3	< 20	20
2,4,5-Trichlorophenol	8270C	ug/l	< 5.32	5.32	< 5	5
2,4,6-Trichlorophenol	8270C	ug/l	< 5.32	5.32	< 5	5
2,4-Dichlorophenol	8270C	ug/l	< 5.32	5.32	< 5	5
2,4-Dimethylphenol	8270C	ug/l	< 5.32	5.32	< 5	5
2,4-Dinitrophenol	8270C	ug/l	< 26.6	26.6	< 25	25
2,4-Dinitrotoluene	8270C	ug/l	< 5.32	5.32	< 5	5
2,6-Dichlorophenol	8270C	ug/l	< 5.32	5.32	< 5	5
2,6-Dinitrotoluene	8270C	ug/l	< 5.32	5.32	< 5	5
2-Acetylaminofluorene	8270C	ug/l	< 5.32	5.32	< 5	5
2-Chloronaphthalene	8270C	ug/l	< 5.32	5.32	< 5	5
2-Chlorophenol	8270C	ug/l	< 5.32	5.32	< 5	5
2-Methylnaphthalene	8270C	ug/l	< 5.32	5.32	< 5	5
2-Methylphenol	8270C	ug/l	< 5.32	5.32	< 5	5
2-Naphthylamine	8270C	ug/l	< 5.32	5.32	< 5	5
2-Nitroaniline	8270C	ug/l	< 26.6	26.6	< 25	25
2-Nitrophenol	8270C	ug/l	< 5.32	5.32	< 5	5
2-Picoline	8270C	ug/l	< 5.32	5.32	< 5	5
3,3'-Dichlorobenzidine	8270C	ug/l	< 5.32	5.32	< 5	5
3,3'-Dimethylbenzidine	8270C	ug/l	< 21.3	21.3	< 20	20
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/l	< 5.32	5.32	< 5	5
3+4-Methylphenols	8270C	ug/l	< 5.32	5.32	< 5	5
3-Methylchloranthrene	8270C	ug/l	< 5.32	5.32	< 5	5
3-Nitroaniline	8270C	ug/l	< 26.6	26.6	< 25	25
4,6-Dinitro-2-Methylphenol	8270C	ug/l	< 26.6	26.6	< 25	25
4-Aminobiphenyl	8270C	ug/l	< 21.3	21.3	< 20	20
4-Bromophenyl Phenyl Ether	8270C	ug/l	< 5.32	5.32	< 5	5
4-Chloro-3-Methylphenol	8270C	ug/l	< 5.32	5.32	< 5	5
4-Chlorophenyl Phenyl Ether	8270C	ug/l	< 5.32	5.32	< 5	5
4-Dimethylaminoazobenzene	8270C	ug/l	< 5.32	5.32	< 5	5
4-Nitrophenol	8270C	ug/l	< 26.6	26.6	< 25	25
4-Nitroquinoline-N-Oxide	8270C	ug/l	< 21.3	21.3	< 20	20
5-Nitro-O-Toluidine	8270C	ug/l	< 5.32	5.32	< 5	5
7,12-Dimethylbenz(A)Anthracene	8270C	ug/l	< 53.2	53.2	< 50	50
A,A-Dimethylphenethylamine	8270C	ug/l	< 53.2	53.2	< 50	50
Acenaphthene	8270C	ug/l	< 5.32	5.32	< 5	5
Acenaphthylene	8270C	ug/l	< 5.32	5.32	< 5	5
Acetophenone	8270C	ug/l	< 5.32	5.32	< 5	5
Aniline	8270C	ug/l	< 10.6	10.6	< 10	10
Anthracene	8270C	ug/l	< 5.32	5.32	< 5	5
Aramite	8270C	ug/l	< 5.32	5.32	< 5	5
Benzo (A) Anthracene	8270C	ug/l	< 5.32	5.32	< 5	5
Benzo (A) Pyrene	8270C	ug/l	< 5.32	5.32	< 5	5
Benzo (B) Fluoranthene	8270C	ug/l	< 5.32	5.32	< 5	5
Benzo (G,H,I) Perylene	8270C	ug/l	< 5.32	5.32	< 5	5
Benzo (K) Fluoranthene	8270C	ug/l	< 5.32	5.32	< 5	5
Benzyl Alcohol	8270C	ug/l	< 5.32	5.32	< 5	5
Benzyl Butyl Phthalate	8270C	ug/l	< 5.32	5.32	< 5	5
Bis (2-Chloroisopropyl) Ether	8270C	ug/l	< 5.32	5.32	< 5	5
Bis(2-Chloroethoxy)Methane	8270C	ug/l	< 5.32	5.32	< 5	5
Bis(2-Chloroethyl)Ether	8270C	ug/l	< 5.32	5.32	< 5	5
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/l	< 5.32	5.32	9.73	9.73
Chlordecone (Kepone)	8270C	ug/l	< 21.3	21.3	< 20	20
Chlorobenzilate	8270C	ug/l	< 5.32	5.32	< 5	5

2008 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/31/08		07/31/08	
Sample Time			11:55		12:35	
Semi-Volatile Organic Compounds (cont'd)	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Chlorophenols	8270C	ug/l	< 5.32	5.32	< 5	5
Chrysene	8270C	ug/l	< 5.32	5.32	< 5	5
Cygon	8270C	ug/l	< 5.32	5.32	< 5	5
Diallate	8270C	ug/l	< 5.32	5.32	< 5	5
Dibenzo (A,H) Anthracene	8270C	ug/l	< 5.32	5.32	< 5	5
Dibenzofuran	8270C	ug/l	< 5.32	5.32	< 5	5
Diethyl Phthalate	8270C	ug/l	< 5.32	5.32	< 5	5
Dimethyl Phthalate	8270C	ug/l	< 5.32	5.32	< 5	5
Di-N-Butylphthalate	8270C	ug/l	< 5.32	5.32	< 5	5
Di-N-Octyl Phthalate	8270C	ug/l	< 5.32	5.32	< 5	5
Diphenylamine	8270C	ug/l	< 5.32	5.32	< 5	5
Disulfoton	8270C	ug/l	< 21.3	21.3	< 20	20
Ethyl Methanesulfonate	8270C	ug/l	< 21.3	21.3	< 20	20
Famphur	8270C	ug/l	< 10.6	10.6	< 10	10
Fluoranthene	8270C	ug/l	< 5.32	5.32	< 5	5
Fluorene	8270C	ug/l	< 5.32	5.32	< 5	5
Hexachlorobenzene	8270C	ug/l	< 5.32	5.32	< 5	5
Hexachlorobutadiene	8270C	ug/l	< 5.32	5.32	< 5	5
Hexachlorocyclopentadiene	8270C	ug/l	< 5.32	5.32	< 5	5
Hexachloroethane	8270C	ug/l	< 5.32	5.32	< 5	5
Hexachlorophene (Hcp)	8270C	ug/l	< 53.2	53.2	< 50	50
Hexachloropropene	8270C	ug/l	< 5.32	5.32	< 5	5
Indeno (1,2,3-Cd) Pyrene	8270C	ug/l	< 5.32	5.32	< 5	5
Isodrin	8270C	ug/l	< 5.32	5.32	< 5	5
Isosafrole	8270C	ug/l	< 5.32	5.32	< 5	5
M-Dinitrobenzene	8270C	ug/l	< 5.32	5.32	< 5	5
Methanamine, N-Methyl-N-Nitroso	8270C	ug/l	< 5.32	5.32	< 5	5
Methapyrilene	8270C	ug/l	< 21.3	21.3	< 20	20
Methyl Methanesulfonate	8270C	ug/l	< 5.32	5.32	< 5	5
Methyl Parathion	8270C	ug/l	< 21.3	21.3	< 20	20
Naphthalene	8270C	ug/l	< 5.32	5.32	< 5	5
Nitrobenzene	8270C	ug/l	< 5.32	5.32	< 5	5
N-Nitrosodiethylamine	8270C	ug/l	< 5.32	5.32	< 5	5
N-Nitrosodi-N-Butylamine	8270C	ug/l	< 5.32	5.32	< 5	5
N-Nitroso-Di-N-Propylamine	8270C	ug/l	< 5.32	5.32	< 5	5
N-Nitrosodiphenylamine	8270C	ug/l	< 5.32	5.32	< 5	5
N-Nitrosomorpholine	8270C	ug/l	< 5.32	5.32	< 5	5
N-Nitroso-N-Methylethylamine	8270C	ug/l	< 5.32	5.32	< 5	5
N-Nitrosopiperidine	8270C	ug/l	< 21.3	21.3	< 20	20
N-Nitrosopyrrolidine	8270C	ug/l	< 21.3	21.3	< 20	20
O,O,O-Triethyl Phosphorothioate	8270C	ug/l	< 5.32	5.32	< 5	5
O,O-Diethyl O-Pyrazinyl Phosphorothioate	8270C	ug/l	< 5.32	5.32	< 5	5
O-Toluidine	8270C	ug/l	< 21.3	21.3	< 20	20
Parathion	8270C	ug/l	< 5.32	5.32	< 5	5
P-Chloroaniline	8270C	ug/l	< 5.32	5.32	< 5	5
Pentachlorobenzene	8270C	ug/l	< 5.32	5.32	< 5	5
Pentachloroethane	8270C	ug/l	< 5.32	5.32	< 5	5
Pentachloronitrobenzene	8270C	ug/l	< 21.3	21.3	< 20	20
Pentachlorophenol	8270C	ug/l	< 26.6	26.6	< 25	25
Phenacetin	8270C	ug/l	< 5.32	5.32	< 5	5
Phenanthrene	8270C	ug/l	< 5.32	5.32	< 5	5
Phenol	8270C	ug/l	< 5.32	5.32	< 5	5
Phorate	8270C	ug/l	< 5.32	5.32	< 5	5
P-Nitroaniline	8270C	ug/l	< 26.6	26.6	< 25	25
P-Phenylenediamine	8270C	ug/l	< 53.2	53.2	< 50	50
Propyzamide	8270C	ug/l	< 5.32	5.32	< 5	5
Pyrene	8270C	ug/l	< 5.32	5.32	< 5	5
Pyridine	8270C	ug/l	< 53.2	53.2	< 50	50
Safrole	8270C	ug/l	< 5.32	5.32	< 5	5
Sulfotep	8270C	ug/l	< 5.32	5.32	< 5	5

2008 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/31/08		07/31/08	
Sample Time			11:55		12:35	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	ug/L	< 100	100	598	100
Antimony	6010B	ug/L	< 200	200	< 200	200
Arsenic	7060A	mg/L	< 0.004	0.004	0.0625	0.004
Barium	6010B	ug/L	< 10	10	11.8	10
Beryllium	6010B	ug/L	< 10	10	< 10	10
Cadmium	6010B	ug/L	< 10	10	< 10	10
Calcium	6010B	ug/L	777	200	621	200
Cobalt	6010B	ug/L	< 20	20	< 20	20
Copper	6010B	ug/L	< 20	20	< 20	20
Iron	6010B	ug/L	< 100	100	1340	100
Magnesium	6010B	ug/L	684	500	653	500
Manganese	6010B	ug/L	< 10	10	47.5	10
Mercury	7470A	mg/L	< 0.0002	0.0002	< 0.0002	0.0002
Nickel	6010B	ug/L	< 40	40	< 40	40
Potassium	6010B	ug/L	< 1000	1000	< 1000	1000
Selenium	7740	mg/L	< 0.004	0.004	< 0.004	0.004
Silver	6010B	ug/L	< 10	10	< 10	10
Sodium	6010B	ug/L	1480	500	1290	500
Thallium	6010B	ug/L	< 1000	1000	< 1000	1000
Tin	6010B	ug/L	< 500	500	< 500	500
Vanadium	6010B	ug/L	< 10	10	< 10	10
Zinc	6010B	ug/L	< 20	20	< 20	20

-- = Not Analyzed/Not Applicable
mg/l = milligrams per liter
ug/l = microgrmas per liter
< = analyte not detected at or above the specified laboratory reporting limit

2009 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/28/09		07/29/09	
Sample Time			9:10		9:30	
Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,1,1,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,1-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
1,2,3-Trichloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromo-3-Chloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromoethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloropropane	8260B	ug/l	< 5	5	< 5	5
1,4-Dioxane	8260B	ug/l	< 100	100	< 100	100
2-Butanone	8260B	ug/l	< 10	10	< 10	10
2-Chlor-1,3-Butadiene	8260B	ug/l	< 5	5	< 5	5
2-Chloroethyl Vinyl Ether	8260B	ug/l	< 10	10	< 10	10
2-Hexanone	8260B	ug/l	< 10	10	< 10	10
2-Methyl-1-Propanol	8260B	ug/l	< 100	100	< 100	100
3-Chloropropene	8260B	ug/l	< 100	100	< 100	100
4-Methyl 2-Pentanone	8260B	ug/l	< 10	10	< 10	10
Acetone	8260B	ug/l	< 10	10	< 10	10
Acetonitrile	8260B	ug/l	< 100	100	< 100	100
Acrolein	8260B	ug/l	< 100	100	< 100	100
Acrylonitrile	8260B	ug/l	< 100	100	< 100	100
Benzene	8260B	ug/l	< 5	5	< 5	5
Bromodichloromethane	8260B	ug/l	< 5	5	< 5	5
Bromoform	8260B	ug/l	< 5	5	< 5	5
Bromomethane	8260B	ug/l	< 10	10	< 10	10
Carbon Disulfide	8260B	ug/l	< 5	5	< 5	5
Carbon Tetrachloride	8260B	ug/l	< 5	5	< 5	5
Chlorobenzene	8260B	ug/l	< 5	5	< 5	5
Chloroethane	8260B	ug/l	< 5	5	< 5	5
Chloroform	8260B	ug/l	< 5	5	< 5	5
Chloromethane	8260B	ug/l	< 10	10	< 10	10
Cis-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Dibromochloromethane	8260B	ug/l	< 5	5	< 5	5
Dibromomethane	8260B	ug/l	< 5	5	< 5	5
Dichlorodifluoromethane	8260B	ug/l	< 5	5	< 5	5
Ethyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Ethylbenzene	8260B	ug/l	< 5	5	< 5	5
Methyl Iodide	8260B	ug/l	< 5	5	< 5	5
Methyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Methylacrylonitrile	8260B	ug/l	< 5	5	< 5	5
Methylene Chloride	8260B	ug/l	< 5	5	< 5	5
Propionitrile	8260B	ug/l	< 5	5	< 5	5
Styrene	8260B	ug/l	< 5	5	< 5	5
Tetrachloroethene	8260B	ug/l	< 5	5	< 5	5
Toluene	8260B	ug/l	< 5	5	< 5	5
Trans-1,2-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
Trans-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Trans-1,4-Dichloro-2-Butene	8260B	ug/l	< 5	5	< 5	5
Trichloroethene	8260B	ug/l	< 5	5	< 5	5
Trichlorofluoromethane	8260B	ug/l	< 5	5	< 5	5
Vinyl Acetate	8260B	ug/l	< 10	10	< 10	10
Vinyl Chloride	8260B	ug/l	< 2	2	< 2	2
Xylenes (Total)	8260B	ug/l	< 5	5	< 5	5

2009 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/28/09		07/29/09	
Sample Time			9:10		9:30	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,2,4,5-Tetrachlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,2,4-Trichlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,2-Dichlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,3,5-Trinitrobenzene	8270C	ug/l	< 5	5	< 5	5
1,3-Dichlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,4-Dichlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,4-Naphthoquinone	8270C	ug/l	< 5	5	< 5	5
1-Naphthylamine	8270C	ug/l	< 5	5	< 5	5
2,4,5-Trichlorophenol	8270C	ug/l	< 5	5	< 5	5
2,4,6-Trichlorophenol	8270C	ug/l	< 5	5	< 5	5
2,4-Dichlorophenol	8270C	ug/l	< 5	5	< 5	5
2,4-Dimethylphenol	8270C	ug/l	< 5	5	< 5	5
2,4-Dinitrophenol	8270C	ug/l	< 5	5	< 5	5
2,4-Dinitrotoluene	8270C	ug/l	< 25	25	< 25	25
2,6-Dichlorophenol	8270C	ug/l	< 5	5	< 5	5
2,6-Dinitrotoluene	8270C	ug/l	< 5	5	< 5	5
2-Acetylaminofluorene	8270C	ug/l	< 5	5	< 5	5
2-Chloronaphthalene	8270C	ug/l	< 5	5	< 5	5
2-Chlorophenol	8270C	ug/l	< 5	5	< 5	5
2-Methylnaphthalene	8270C	ug/l	< 5	5	< 5	5
2-Methylphenol	8270C	ug/l	< 5	5	< 5	5
2-Naphthylamine	8270C	ug/l	< 5	5	< 5	5
2-Nitroaniline	8270C	ug/l	< 5	5	< 5	5
2-Nitrophenol	8270C	ug/l	< 25	25	< 25	25
2-Picoline	8270C	ug/l	< 5	5	< 5	5
3,3'-Dichlorobenzidine	8270C	ug/l	< 5	5	< 5	5
3,3'-Dimethylbenzidine	8270C	ug/l	< 5	5	< 5	5
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/l	< 25	25	< 25	25
3+4-Methylphenols	8270C	ug/l	< 5	5	< 5	5
3-Methylchloranthrene	8270C	ug/l	< 5	5	< 5	5
3-Nitroaniline	8270C	ug/l	< 5	5	< 5	5
4,6-Dinitro-2-Methylphenol	8270C	ug/l	< 25	25	< 25	25
4-Aminobiphenyl	8270C	ug/l	< 25	25	< 25	25
4-Bromophenyl Phenyl Ether	8270C	ug/l	< 5	5	< 5	5
4-Chloro-3-Methylphenol	8270C	ug/l	< 5	5	< 5	5
4-Chlorophenyl Phenyl Ether	8270C	ug/l	< 5	5	< 5	5
4-Dimethylaminoazobenzene	8270C	ug/l	< 5	5	< 5	5
4-Nitrophenol	8270C	ug/l	< 5	5	< 5	5
4-Nitroquinoline-N-Oxide	8270C	ug/l	< 25	25	< 25	25
5-Nitro-O-Toluidine	8270C	ug/l	< 20	20	< 20	20
7,12-Dimethylbenz(A)Anthracene	8270C	ug/l	< 5	5	< 5	5
A,A-Dimethylphenethylamine	8270C	ug/l	< 25	25	< 25	25
Acenaphthene	8270C	ug/l	< 25	25	< 25	25
Acenaphthylene	8270C	ug/l	< 5	5	< 5	5
Acetophenone	8270C	ug/l	< 5	5	< 5	5
Aniline	8270C	ug/l	< 5	5	< 5	5
Anthracene	8270C	ug/l	< 10	10	< 10	10
Aramite	8270C	ug/l	< 5	5	< 5	5
Benzo (A) Anthracene	8270C	ug/l	< 5	5	< 5	5
Benzo (A) Pyrene	8270C	ug/l	< 5	5	< 5	5
Benzo (B) Fluoranthene	8270C	ug/l	< 5	5	< 5	5
Benzo (G,H,I) Perylene	8270C	ug/l	< 5	5	< 5	5
Benzo (K) Fluoranthene	8270C	ug/l	< 5	5	< 5	5
Benzyl Alcohol	8270C	ug/l	< 5	5	< 5	5
Benzyl Butyl Phthalate	8270C	ug/l	< 5	5	< 5	5
Bis (2-Chloroisopropyl) Ether	8270C	ug/l	< 5	5	< 5	5
Bis(2-Chloroethoxy)Methane	8270C	ug/l	< 5	5	< 5	5
Bis(2-Chloroethyl)Ether	8270C	ug/l	< 5	5	< 5	5
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/l	< 5	5	< 5	5
Chlordecone (Kepone)	8270C	ug/l	< 20	20	< 20	20
Chlorobenzilate	8270C	ug/l	< 5	5	< 5	5

2009 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/28/09		07/29/09	
Sample Time			9:10		9:30	
Semi-Volatile Organic Compounds (cont'd)	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Chlorophenols	8270C	ug/l	< 5	5	< 5	5
Chrysene	8270C	ug/l	< 5	5	< 5	5
Cygon	8270C	ug/l	< 5	5	< 5	5
Diallate	8270C	ug/l	< 25	25	< 25	25
Dibenzo (A,H) Anthracene	8270C	ug/l	< 5	5	< 5	5
Dibenzofuran	8270C	ug/l	< 5	5	< 5	5
Diethyl Phthalate	8270C	ug/l	< 5	5	< 5	5
Dimethyl Phthalate	8270C	ug/l	< 5	5	< 5	5
Di-N-Butylphthalate	8270C	ug/l	< 5	5	< 5	5
Di-N-Octyl Phthalate	8270C	ug/l	< 5	5	< 5	5
Diphenylamine	8270C	ug/l	< 5	5	< 5	5
Disulfoton	8270C	ug/l	< 5	5	< 5	5
Ethyl Methanesulfonate	8270C	ug/l	< 5	5	< 5	5
Famphur	8270C	ug/l	< 10	10	< 10	10
Fluoranthene	8270C	ug/l	< 5	5	< 5	5
Fluorene	8270C	ug/l	< 5	5	< 5	5
Hexachlorobenzene	8270C	ug/l	< 5	5	< 5	5
Hexachlorobutadiene	8270C	ug/l	< 5	5	< 5	5
Hexachlorocyclopentadiene	8270C	ug/l	< 5	5	< 5	5
Hexachloroethane	8270C	ug/l	< 5	5	< 5	5
Hexachlorophene (Hcp)	8270C	ug/l	< 50	50	< 50	50
Hexachloropropene	8270C	ug/l	< 5	5	< 5	5
Indeno (1,2,3-Cd) Pyrene	8270C	ug/l	< 5	5	< 5	5
Isodrin	8270C	ug/l	< 5	5	< 5	5
Isosafrole	8270C	ug/l	< 5	5	< 5	5
M-Dinitrobenzene	8270C	ug/l	< 5	5	< 5	5
Methanamine, N-Methyl-N-Nitroso	8270C	ug/l	< 5	5	< 5	5
Methapyrilene	8270C	ug/l	< 25	25	< 25	25
Methyl Methanesulfonate	8270C	ug/l	< 5	5	< 5	5
Methyl Parathion	8270C	ug/l	< 5	5	< 5	5
Naphthalene	8270C	ug/l	< 5	5	< 5	5
Nitrobenzene	8270C	ug/l	< 5	5	< 5	5
N-Nitrosodiethylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitrosodi-N-Butylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitroso-Di-N-Propylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitrosodiphenylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitrosomorpholine	8270C	ug/l	< 5	5	< 5	5
N-Nitroso-N-Methylethylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitrosopiperidine	8270C	ug/l	< 5	5	< 5	5
N-Nitrosopyrrolidine	8270C	ug/l	< 5	5	< 5	5
O,O,O-Triethyl Phosphorothioate	8270C	ug/l	< 5	5	< 5	5
O,O-Diethyl O-Pyrazinyl Phosphorothioate	8270C	ug/l	< 5	5	< 5	5
O-Toluidine	8270C	ug/l	< 5	5	< 5	5
Parathion	8270C	ug/l	< 5	5	< 5	5
P-Chloroaniline	8270C	ug/l	< 5	5	< 5	5
Pentachlorobenzene	8270C	ug/l	< 5	5	< 5	5
Pentachloroethane	8270C	ug/l	< 5	5	< 5	5
Pentachloronitrobenzene	8270C	ug/l	< 5	5	< 5	5
Pentachlorophenol	8270C	ug/l	< 25	25	< 25	25
Phenacetin	8270C	ug/l	< 5	5	< 5	5
Phenanthrene	8270C	ug/l	< 5	5	< 5	5
Phenol	8270C	ug/l	< 5	5	< 5	5
Phorate	8270C	ug/l	< 5	5	< 5	5
P-Nitroaniline	8270C	ug/l	< 25	25	< 25	25
P-Phenylenediamine	8270C	ug/l	< 100	100	< 100	100
Propyzamide	8270C	ug/l	< 5	5	< 5	5
Pyrene	8270C	ug/l	< 5	5	< 5	5
Pyridine	8270C	ug/l	< 25	25	< 25	25
Safrole	8270C	ug/l	< 5	5	< 5	5
Sulfotep	8270C	ug/l	< 5	5	< 5	5

2009 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/28/09		07/29/09	
Sample Time			9:10		9:30	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/L	0.551	0.1	0.968	0.1
Antimony	6010B	mg/L	< 0.2	0.2	< 0.2	0.2
Arsenic	6020	mg/L	< 0.001	0.001	0.0362	0.001
Barium	6010B	mg/L	0.0256	0.01	0.0134	0.01
Beryllium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Cadmium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Calcium	6010B	mg/L	0.294	0.2	0.472	0.2
Cobalt	6010B	mg/L	< 0.02	0.02	< 0.02	0.02
Copper	6010B	mg/L	< 0.02	0.02	< 0.02	0.02
Iron	6010B	mg/L	0.555	0.1	2.16	0.1
Magnesium	6010B	mg/L	< 0.5	0.5	0.802	0.5
Manganese	6010B	mg/L	0.623	0.01	0.0692	0.01
Mercury	7470A	mg/L	< 0.0002	0.0002	< 0.0002	0.0002
Nickel	6010B	mg/L	< 0.04	0.04	< 0.04	0.04
Potassium	6010B	ug/L	< 1	1	< 1	1
Selenium	6020	mg/L	< 0.001	0.001	< 0.001	0.001
Silver	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Sodium	6010B	mg/L	2.05	0.5	1.41	0.5
Thallium	6010B	mg/L	< 1	1	< 1	1
Tin	6010B	mg/L	< 0.5	0.5	< 0.5	0.5
Vanadium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Zinc	6010B	mg/L	< 0.02	0.02	< 0.02	0.02

-- = Not Analyzed/Not Applicable
mg/l = milligrams per liter
ug/l = microgrmas per liter
< = analyte not detected at or above the specified laboratory reporting limit

2009 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/29/09		07/29/09	
Sample Time			11:45		13:30	
Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,1,1,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,1-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2,2-Tetrachloroethane	8260B	ug/l	< 5	5	< 5	5
1,1,2-Trichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,1-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
1,2,3-Trichloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromo-3-Chloropropane	8260B	ug/l	< 5	5	< 5	5
1,2-Dibromoethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloroethane	8260B	ug/l	< 5	5	< 5	5
1,2-Dichloropropane	8260B	ug/l	< 5	5	< 5	5
1,4-Dioxane	8260B	ug/l	< 100	100	< 100	100
2-Butanone	8260B	ug/l	< 10	10	< 10	10
2-Chlor-1,3-Butadiene	8260B	ug/l	< 5	5	< 5	5
2-Chloroethyl Vinyl Ether	8260B	ug/l	< 10	10	< 10	10
2-Hexanone	8260B	ug/l	< 10	10	< 10	10
2-Methyl-1-Propanol	8260B	ug/l	< 100	100	< 100	100
3-Chloropropene	8260B	ug/l	< 100	100	< 100	100
4-Methyl 2-Pentanone	8260B	ug/l	< 10	10	< 10	10
Acetone	8260B	ug/l	< 10	10	< 10	10
Acetonitrile	8260B	ug/l	< 100	100	< 100	100
Acrolein	8260B	ug/l	< 100	100	< 100	100
Acrylonitrile	8260B	ug/l	< 100	100	< 100	100
Benzene	8260B	ug/l	< 5	5	< 5	5
Bromodichloromethane	8260B	ug/l	< 5	5	< 5	5
Bromoform	8260B	ug/l	< 5	5	< 5	5
Bromomethane	8260B	ug/l	< 10	10	< 10	10
Carbon Disulfide	8260B	ug/l	< 5	5	< 5	5
Carbon Tetrachloride	8260B	ug/l	< 5	5	< 5	5
Chlorobenzene	8260B	ug/l	< 5	5	< 5	5
Chloroethane	8260B	ug/l	< 5	5	< 5	5
Chloroform	8260B	ug/l	< 5	5	< 5	5
Chloromethane	8260B	ug/l	< 10	10	< 10	10
Cis-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Dibromochloromethane	8260B	ug/l	< 5	5	< 5	5
Dibromomethane	8260B	ug/l	< 5	5	< 5	5
Dichlorodifluoromethane	8260B	ug/l	< 5	5	< 5	5
Ethyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Ethylbenzene	8260B	ug/l	< 5	5	< 5	5
Methyl Iodide	8260B	ug/l	< 5	5	< 5	5
Methyl Methacrylate	8260B	ug/l	< 5	5	< 5	5
Methylacrylonitrile	8260B	ug/l	< 5	5	< 5	5
Methylene Chloride	8260B	ug/l	< 5	5	< 5	5
Propionitrile	8260B	ug/l	< 5	5	< 5	5
Styrene	8260B	ug/l	< 5	5	< 5	5
Tetrachloroethene	8260B	ug/l	< 5	5	< 5	5
Toluene	8260B	ug/l	< 5	5	< 5	5
Trans-1,2-Dichloroethene	8260B	ug/l	< 5	5	< 5	5
Trans-1,3-Dichloropropene	8260B	ug/l	< 5	5	< 5	5
Trans-1,4-Dichloro-2-Butene	8260B	ug/l	< 5	5	< 5	5
Trichloroethene	8260B	ug/l	< 5	5	< 5	5
Trichlorofluoromethane	8260B	ug/l	< 5	5	< 5	5
Vinyl Acetate	8260B	ug/l	< 10	10	< 10	10
Vinyl Chloride	8260B	ug/l	< 2	2	< 2	2
Xylenes (Total)	8260B	ug/l	< 5	5	< 5	5

2009 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/29/09		07/29/09	
Sample Time			11:45		13:30	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,2,4,5-Tetrachlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,2,4-Trichlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,2-Dichlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,3,5-Trinitrobenzene	8270C	ug/l	< 5	5	< 5	5
1,3-Dichlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,4-Dichlorobenzene	8270C	ug/l	< 5	5	< 5	5
1,4-Naphthoquinone	8270C	ug/l	< 5	5	< 5	5
1-Naphthylamine	8270C	ug/l	< 5	5	< 5	5
2,4,5-Trichlorophenol	8270C	ug/l	< 5	5	< 5	5
2,4,6-Trichlorophenol	8270C	ug/l	< 5	5	< 5	5
2,4-Dichlorophenol	8270C	ug/l	< 5	5	< 5	5
2,4-Dimethylphenol	8270C	ug/l	< 5	5	< 5	5
2,4-Dinitrophenol	8270C	ug/l	< 5	5	< 5	5
2,4-Dinitrotoluene	8270C	ug/l	< 25	25	< 25	25
2,6-Dichlorophenol	8270C	ug/l	< 5	5	< 5	5
2,6-Dinitrotoluene	8270C	ug/l	< 5	5	< 5	5
2-Acetylaminofluorene	8270C	ug/l	< 5	5	< 5	5
2-Chloronaphthalene	8270C	ug/l	< 5	5	< 5	5
2-Chlorophenol	8270C	ug/l	< 5	5	< 5	5
2-Methylnaphthalene	8270C	ug/l	< 5	5	< 5	5
2-Methylphenol	8270C	ug/l	< 5	5	< 5	5
2-Naphthylamine	8270C	ug/l	< 5	5	< 5	5
2-Nitroaniline	8270C	ug/l	< 5	5	< 5	5
2-Nitrophenol	8270C	ug/l	< 25	25	< 25	25
2-Picoline	8270C	ug/l	< 5	5	< 5	5
3,3'-Dichlorobenzidine	8270C	ug/l	< 5	5	< 5	5
3,3'-Dimethylbenzidine	8270C	ug/l	< 5	5	< 5	5
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/l	< 25	25	< 25	25
3+4-Methylphenols	8270C	ug/l	< 5	5	< 5	5
3-Methylchloranthrene	8270C	ug/l	< 5	5	< 5	5
3-Nitroaniline	8270C	ug/l	< 5	5	< 5	5
4,6-Dinitro-2-Methylphenol	8270C	ug/l	< 25	25	< 25	25
4-Aminobiphenyl	8270C	ug/l	< 25	25	< 25	25
4-Bromophenyl Phenyl Ether	8270C	ug/l	< 5	5	< 5	5
4-Chloro-3-Methylphenol	8270C	ug/l	< 5	5	< 5	5
4-Chlorophenyl Phenyl Ether	8270C	ug/l	< 5	5	< 5	5
4-Dimethylaminoazobenzene	8270C	ug/l	< 5	5	< 5	5
4-Nitrophenol	8270C	ug/l	< 5	5	< 5	5
4-Nitroquinoline-N-Oxide	8270C	ug/l	< 25	25	< 25	25
5-Nitro-O-Toluidine	8270C	ug/l	< 20	20	< 20	20
7,12-Dimethylbenz(A)Anthracene	8270C	ug/l	< 5	5	< 5	5
A,A-Dimethylphenethylamine	8270C	ug/l	< 25	25	< 25	25
Acenaphthene	8270C	ug/l	< 25	25	< 25	25
Acenaphthylene	8270C	ug/l	< 5	5	< 5	5
Acetophenone	8270C	ug/l	< 5	5	< 5	5
Aniline	8270C	ug/l	< 5	5	< 5	5
Anthracene	8270C	ug/l	< 10	10	< 10	10
Aramite	8270C	ug/l	< 5	5	< 5	5
Benzo (A) Anthracene	8270C	ug/l	< 5	5	< 5	5
Benzo (A) Pyrene	8270C	ug/l	< 5	5	< 5	5
Benzo (B) Fluoranthene	8270C	ug/l	< 5	5	< 5	5
Benzo (G,H,I) Perylene	8270C	ug/l	< 5	5	< 5	5
Benzo (K) Fluoranthene	8270C	ug/l	< 5	5	< 5	5
Benzyl Alcohol	8270C	ug/l	< 5	5	< 5	5
Benzyl Butyl Phthalate	8270C	ug/l	< 5	5	< 5	5
Bis (2-Chloroisopropyl) Ether	8270C	ug/l	< 5	5	< 5	5
Bis(2-Chloroethoxy)Methane	8270C	ug/l	< 5	5	< 5	5
Bis(2-Chloroethyl)Ether	8270C	ug/l	< 5	5	< 5	5
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/l	< 5	5	< 5	5
Chlordecone (Kepone)	8270C	ug/l	< 20	20	< 20	20
Chlorobenzilate	8270C	ug/l	< 5	5	< 5	5

2009 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/29/09		07/29/09	
Sample Time			11:45		13:30	
Semi-Volatile Organic Compounds (cont'd)	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Chlorophenols	8270C	ug/l	< 5	5	< 5	5
Chrysene	8270C	ug/l	< 5	5	< 5	5
Cygon	8270C	ug/l	< 5	5	< 5	5
Diallate	8270C	ug/l	< 25	25	< 25	25
Dibenzo (A,H) Anthracene	8270C	ug/l	< 5	5	< 5	5
Dibenzofuran	8270C	ug/l	< 5	5	< 5	5
Diethyl Phthalate	8270C	ug/l	< 5	5	< 5	5
Dimethyl Phthalate	8270C	ug/l	< 5	5	< 5	5
Di-N-Butylphthalate	8270C	ug/l	< 5	5	< 5	5
Di-N-Octyl Phthalate	8270C	ug/l	< 5	5	< 5	5
Diphenylamine	8270C	ug/l	< 5	5	< 5	5
Disulfoton	8270C	ug/l	< 5	5	< 5	5
Ethyl Methanesulfonate	8270C	ug/l	< 5	5	< 5	5
Famphur	8270C	ug/l	< 10	10	< 10	10
Fluoranthene	8270C	ug/l	< 5	5	< 5	5
Fluorene	8270C	ug/l	< 5	5	< 5	5
Hexachlorobenzene	8270C	ug/l	< 5	5	< 5	5
Hexachlorobutadiene	8270C	ug/l	< 5	5	< 5	5
Hexachlorocyclopentadiene	8270C	ug/l	< 5	5	< 5	5
Hexachloroethane	8270C	ug/l	< 5	5	< 5	5
Hexachlorophene (Hcp)	8270C	ug/l	< 50	50	< 50	50
Hexachloropropene	8270C	ug/l	< 5	5	< 5	5
Indeno (1,2,3-Cd) Pyrene	8270C	ug/l	< 5	5	< 5	5
Isodrin	8270C	ug/l	< 5	5	< 5	5
Isosafrole	8270C	ug/l	< 5	5	< 5	5
M-Dinitrobenzene	8270C	ug/l	< 5	5	< 5	5
Methanamine, N-Methyl-N-Nitroso	8270C	ug/l	< 5	5	< 5	5
Methapyrilene	8270C	ug/l	< 25	25	< 25	25
Methyl Methanesulfonate	8270C	ug/l	< 5	5	< 5	5
Methyl Parathion	8270C	ug/l	< 5	5	< 5	5
Naphthalene	8270C	ug/l	< 5	5	< 5	5
Nitrobenzene	8270C	ug/l	< 5	5	< 5	5
N-Nitrosodiethylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitrosodi-N-Butylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitroso-Di-N-Propylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitrosodiphenylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitrosomorpholine	8270C	ug/l	< 5	5	< 5	5
N-Nitroso-N-Methylethylamine	8270C	ug/l	< 5	5	< 5	5
N-Nitrosopiperidine	8270C	ug/l	< 5	5	< 5	5
N-Nitrosopyrrolidine	8270C	ug/l	< 5	5	< 5	5
O,O,O-Triethyl Phosphorothioate	8270C	ug/l	< 5	5	< 5	5
O,O-Diethyl O-Pyrazinyl Phosphorothioate	8270C	ug/l	< 5	5	< 5	5
O-Toluidine	8270C	ug/l	< 5	5	< 5	5
Parathion	8270C	ug/l	< 5	5	< 5	5
P-Chloroaniline	8270C	ug/l	< 5	5	< 5	5
Pentachlorobenzene	8270C	ug/l	< 5	5	< 5	5
Pentachloroethane	8270C	ug/l	< 5	5	< 5	5
Pentachloronitrobenzene	8270C	ug/l	< 5	5	< 5	5
Pentachlorophenol	8270C	ug/l	< 25	25	< 25	25
Phenacetin	8270C	ug/l	< 5	5	< 5	5
Phenanthrene	8270C	ug/l	< 5	5	< 5	5
Phenol	8270C	ug/l	< 5	5	< 5	5
Phorate	8270C	ug/l	< 5	5	< 5	5
P-Nitroaniline	8270C	ug/l	< 25	25	< 25	25
P-Phenylenediamine	8270C	ug/l	< 100	100	< 100	100
Propyzamide	8270C	ug/l	< 5	5	< 5	5
Pyrene	8270C	ug/l	< 5	5	< 5	5
Pyridine	8270C	ug/l	< 25	25	< 25	25
Safrole	8270C	ug/l	< 5	5	< 5	5
Sulfotep	8270C	ug/l	< 5	5	< 5	5

2009 Groundwater Extended Parameters Sample Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/29/09		07/29/09	
Sample Time			11:45		13:30	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/L	< 0.1	0.1	1.98	0.1
Antimony	6010B	mg/L	< 0.2	0.2	< 0.2	0.2
Arsenic	6020	mg/L	< 0.001	0.001	0.0332	0.001
Barium	6010B	mg/L	< 0.01	0.01	0.0416	0.01
Beryllium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Cadmium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Calcium	6010B	mg/L	0.623	0.2	4.09	0.2
Cobalt	6010B	mg/L	< 0.02	0.02	< 0.02	0.02
Copper	6010B	mg/L	< 0.02	0.02	< 0.02	0.02
Iron	6010B	mg/L	0.17	0.1	3.69	0.1
Magnesium	6010B	mg/L	0.798	0.5	1.15	0.5
Manganese	6010B	mg/L	< 0.01	0.01	0.11	0.01
Mercury	7470A	mg/L	< 0.0002	0.0002	< 0.0002	0.0002
Nickel	6010B	mg/L	< 0.04	0.04	< 0.04	0.04
Potassium	6010B	ug/L	< 1	1	< 1	1
Selenium	6020	mg/L	< 0.001	0.001	< 0.001	0.001
Silver	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Sodium	6010B	mg/L	1.64	0.5	1.64	0.5
Thallium	6010B	mg/L	< 1	1	< 1	1
Tin	6010B	mg/L	< 0.5	0.5	< 0.5	0.5
Vanadium	6010B	mg/L	< 0.01	0.01	< 0.01	0.01
Zinc	6010B	mg/L	< 0.02	0.02	0.368	0.02

-- = Not Analyzed/Not Applicable
mg/l = milligrams per liter
ug/l = microgrmas per liter
< = analyte not detected at or above the specified laboratory reporting limi

2010
Groundwater Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/13/10		07/14/10	
Sample Time			8:20		8:15	
Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,1,1,2-Tetrachloroethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,1,1-Trichloroethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,1,2,2-Tetrachloroethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,1,2-Trichloroethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,1-Dichloroethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,1-Dichloroethene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,2,3-Trichloropropane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,2-Dibromo-3-Chloropropane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,2-Dibromoethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,2-Dichloroethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,2-Dichloropropane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,4-Dioxane	8260B	ug/l	< 100	100	< 100	100
2-Butanone	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
2-Chlor-1,3-Butadiene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
2-Chloroethyl Vinyl Ether	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
2-Hexanone	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
2-Methyl-1-Propanol	8260B	ug/l	< 100	100	< 100	100
3-Chloropropene	8260B	ug/l	< 100	100	< 100	100
4-Methyl 2-Pentanone	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
Acetone	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
Acetonitrile	8260B	ug/l	< 100	100	< 100	100
Acrolein	8260B	ug/l	< 100	100	< 100	100
Acrylonitrile	8260B	ug/l	< 100	100	< 100	100
Benzene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Bromodichloromethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Bromoform	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Bromomethane	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
Carbon Disulfide	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Carbon Tetrachloride	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Chlorobenzene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Chloroethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Chloroform	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Chloromethane	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
Cis-1,3-Dichloropropene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Dibromochloromethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Dibromomethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Dichlorodifluoromethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Ethyl Methacrylate	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Ethylbenzene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Methyl Iodide	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Methyl Methacrylate	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Methylacrylonitrile	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Methylene Chloride	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Propionitrile	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Styrene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Tetrachloroethene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Toluene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Trans-1,2-Dichloroethene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Trans-1,3-Dichloropropene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Trans-1,4-Dichloro-2-Butene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Trichloroethene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Trichlorofluoromethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Vinyl Acetate	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
Vinyl Chloride	8260B	ug/l	< 2.00	2.00	< 2.00	2.00
Xylenes (Total)	8260B	ug/l	< 5.00	5.00	< 5.00	5.00

2010
Groundwater Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID **Sample Date** **Sample Time**			MW-2A 07/13/10 8:20		MW-4A 07/14/10 8:15	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,2,4,5-Tetrachlorobenzene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
1,2,4-Trichlorobenzene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
1,2-Dichlorobenzene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
1,3,5-Trinitrobenzene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
1,3-Dichlorobenzene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
1,4-Dichlorobenzene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
1,4-Naphthoquinone	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
1-Naphthylamine	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
2,4,5-Trichlorophenol	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
2,4,6-Trichlorophenol	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
2,4-Dichlorophenol	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
2,4-Dimethylphenol	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
2,4-Dinitrophenol	8270C	ug/l	< 25.0	25.0	< 25.0	25.0
2,4-Dinitrotoluene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
2,6-Dichlorophenol	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
2,6-Dinitrotoluene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
2-Acetylaminofluorene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
2-Chloronaphthalene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
2-Chlorophenol	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
2-Methylnaphthalene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
2-Methylphenol	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
2-Naphthylamine	8270C	ug/l	< 5.00	5.00	< 25.0	5.00
2-Nitroaniline	8270C	ug/l	< 25.0	25.0	< 25.0	25.0
2-Nitrophenol	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
2-Picoline	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
3,3'-Dichlorobenzidine	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
3,3'-Dimethylbenzidine	8270C	ug/l	< 25.0	25.0	< 25.0	25.0
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
3+4-Methylphenols	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
3-Methylchloranthrene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
3-Nitroaniline	8270C	ug/l	< 25.0	25.0	< 25.0	25.0
4,6-Dinitro-2-Methylphenol	8270C	ug/l	< 25.0	25.0	< 25.0	25.0
4-Aminobiphenyl	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
4-Bromophenyl Phenyl Ether	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
4-Chloro-3-Methylphenol	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
4-Chlorophenyl Phenyl Ether	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
4-Dimethylaminoazobenzene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
4-Nitrophenol	8270C	ug/l	< 25.0	25.0	< 25.0	25.0
4-Nitroquinoline-N-Oxide	8270C	ug/l	< 20.0	20.0	< 20.0	20.0
5-Nitro-O-Toluidine	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
7,12-Dimethylbenz(A)Anthracene	8270C	ug/l	< 25.0	25.0	< 25.0	25.0
A,A-Dimethylphenethylamine	8270C	ug/l	< 25.0	25.0	< 25.0	25.0
Acenaphthene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Acenaphthylene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Acetophenone	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Aniline	8270C	ug/l	< 10.0	10.0	< 10.0	10.0
Anthracene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Aramite	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Benzo (A) Anthracene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Benzo (A) Pyrene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Benzo (B) Fluoranthene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Benzo (G,H,I) Perylene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Benzo (K) Fluoranthene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Benzyl Alcohol	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Benzyl Butyl Phthalate	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Bis (2-Chloroisopropyl) Ether	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Bis(2-Chloroethoxy)Methane	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Bis(2-Chloroethyl)Ether	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Chlordecone (Kepone)	8270C	ug/l	< 20.0	20.0	< 20.0	20.0
Chlorobenzilate	8270C	ug/l	< 5.00	5.00	< 5.00	5.00

2010
Groundwater Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/13/10		07/14/10	
Sample Time			8:20		8:15	
Semi-Volatile Organic Compounds (cont'd)	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Chlorophenols	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Chrysene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Cygon	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Diallate	8270C	ug/l	< 25.0	25.0	< 25.0	25.0
Dibenzo (A,H) Anthracene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Dibenzofuran	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Diethyl Phthalate	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Dimethyl Phthalate	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Di-N-Butylphthalate	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Di-N-Octyl Phthalate	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Diphenylamine	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Disulfoton	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Ethyl Methanesulfonate	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Famphur	8270C	ug/l	< 10.0	10.0	< 10.0	10.0
Fluoranthene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Fluorene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Hexachlorobenzene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Hexachlorobutadiene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Hexachlorocyclopentadiene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Hexachloroethane	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Hexachlorophene (Hcp)	8270C	ug/l	< 50.0	50.0	< 50.0	50.0
Hexachloropropene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Indeno (1,2,3-Cd) Pyrene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Isodrin	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Isosafrole	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
M-Dinitrobenzene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Methanamine, N-Methyl-N-Nitroso	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Methapyrilene	8270C	ug/l	< 25.0	25.0	< 25.0	25.0
Methyl Methanesulfonate	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Methyl Parathion	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Naphthalene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Nitrobenzene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
N-Nitrosodiethylamine	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
N-Nitrosodi-N-Butylamine	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
N-Nitroso-Di-N-Propylamine	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
N-Nitrosodiphenylamine	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
N-Nitrosomorpholine	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
N-Nitroso-N-Methylethylamine	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
N-Nitrosopiperidine	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
N-Nitrosopyrrolidine	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
O,O,O-Triethyl Phosphorothioate	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
O,O-Diethyl O-Pyrazinyl Phosphorothioate	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
O-Toluidine	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Parathion	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
P-Chloroaniline	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Pentachlorobenzene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Pentachloroethane	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Pentachloronitrobenzene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Pentachlorophenol	8270C	ug/l	< 25.0	25.0	< 25.0	25.0
Phenacetin	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Phenanthrene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Phenol	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Phorate	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
P-Nitroaniline	8270C	ug/l	< 25.0	25.0	< 25.0	25.0
P-Phenylenediamine	8270C	ug/l	< 100	100	< 100	100
Propyzamide	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Pyrene	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Pyridine	8270C	ug/l	< 25.0	25.0	< 25.0	25.0
Safrole	8270C	ug/l	< 5.00	5.00	< 5.00	5.00
Sulfotep	8270C	ug/l	< 5.00	5.00	< 5.00	5.00

2010
Groundwater Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-2A		MW-4A	
Sample Date			07/13/10		07/14/10	
Sample Time			8:20		8:15	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/L	0.614	0.100	2.22	0.100
Antimony	6010B	mg/L	< 0.200	0.200	< 0.200	0.200
Arsenic	6020	mg/L	< 0.00100	0.00100	0.0512	0.00100
Arsenic, Dissolved	6020	mg/L	< 0.00100	0.00100	< 0.00100	0.00100
Barium	6010B	mg/L	0.0300	0.0100	0.0357	0.0100
Beryllium	6010B	mg/L	< 0.0100	0.0100	< 0.0100	0.0100
Cadmium	6010B	mg/L	< 0.0100	0.0100	< 0.0100	0.0100
Calcium	6010B	mg/L	0.465	0.200	2.77	0.200
Cobalt	6010B	mg/L	< 0.0200	0.0200	< 0.0200	0.0200
Copper	6010B	mg/L	< 0.0200	0.0200	< 0.0200	0.0200
Iron	6010B	mg/L	0.364	0.100	6.21	0.100
Magnesium	6010B	mg/L	< 0.500	0.500	0.798	0.500
Manganese	6010B	mg/L	0.0458	0.0100	0.158	0.0100
Mercury	7470A	mg/L	< 0.000200	0.000200	< 0.000200	0.000200
Nickel	6010B	mg/L	< 0.0400	0.0400	< 0.0400	0.0400
Potassium	6010B	mg/L	< 1.00	1.00	< 1.00	1.00
Selenium	6020	mg/L	< 0.00100	0.00100	< 0.00100	0.00100
Silver	6010B	mg/L	< 0.0100	0.0100	< 0.0100	0.0100
Sodium	6010B	mg/L	1.88	0.500	1.43	0.500
Thallium	6010B	mg/L	< 1.00	1.00	< 1.00	1.00
Tin	6010B	mg/L	< 0.500	0.500	< 0.500	0.500
Vanadium	6010B	mg/L	< 0.0100	0.0100	< 0.0100	0.0100
Zinc	6010B	mg/L	< 0.0200	0.0200	< 0.0200	0.0200

-- = Not Analyzed/Not Applicable
mg/l = milligrams per liter
ug/l = microgrmas per liter
< = analyte not detected at or above the specified laboratory
reporting limit

2010
Groundwater Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/14/10		07/14/10	
Sample Time			11:00		11:40	
Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,1,1,2-Tetrachloroethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,1,1-Trichloroethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,1,2,2-Tetrachloroethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,1,2-Trichloroethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,1-Dichloroethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,1-Dichloroethene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,2,3-Trichloropropane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,2-Dibromo-3-Chloropropane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,2-Dibromoethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,2-Dichloroethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,2-Dichloropropane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
1,4-Dioxane	8260B	ug/l	< 100	100	< 100	100
2-Butanone	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
2-Chlor-1,3-Butadiene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
2-Chloroethyl Vinyl Ether	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
2-Hexanone	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
2-Methyl-1-Propanol	8260B	ug/l	< 100	100	< 100	100
3-Chloropropene	8260B	ug/l	< 100	100	< 100	100
4-Methyl 2-Pentanone	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
Acetone	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
Acetonitrile	8260B	ug/l	< 100	100	< 100	100
Acrolein	8260B	ug/l	< 100	100	< 100	100
Acrylonitrile	8260B	ug/l	< 100	100	< 100	100
Benzene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Bromodichloromethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Bromoform	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Bromomethane	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
Carbon Disulfide	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Carbon Tetrachloride	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Chlorobenzene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Chloroethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Chloroform	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Chloromethane	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
Cis-1,3-Dichloropropene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Dibromochloromethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Dibromomethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Dichlorodifluoromethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Ethyl Methacrylate	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Ethylbenzene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Methyl Iodide	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Methyl Methacrylate	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Methylacrylonitrile	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Methylene Chloride	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Propionitrile	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Styrene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Tetrachloroethene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Toluene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Trans-1,2-Dichloroethene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Trans-1,3-Dichloropropene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Trans-1,4-Dichloro-2-Butene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Trichloroethene	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Trichlorofluoromethane	8260B	ug/l	< 5.00	5.00	< 5.00	5.00
Vinyl Acetate	8260B	ug/l	< 10.0	10.0	< 10.0	10.0
Vinyl Chloride	8260B	ug/l	< 2.00	2.00	< 2.00	2.00
Xylenes (Total)	8260B	ug/l	< 5.00	5.00	< 5.00	5.00

2010
Groundwater Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/14/10		07/14/10	
Sample Time			11:00		11:40	
Semi-Volatile Organic Compounds	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
1,2,4,5-Tetrachlorobenzene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
1,2,4-Trichlorobenzene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
1,2-Dichlorobenzene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
1,3,5-Trinitrobenzene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
1,3-Dichlorobenzene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
1,4-Dichlorobenzene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
1,4-Naphthoquinone	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
1-Naphthylamine	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
2,4,5-Trichlorophenol	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
2,4,6-Trichlorophenol	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
2,4-Dichlorophenol	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
2,4-Dimethylphenol	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
2,4-Dinitrophenol	8270C	ug/l	< 27.2	27.2	< 25.0	25.0
2,4-Dinitrotoluene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
2,6-Dichlorophenol	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
2,6-Dinitrotoluene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
2-Acetylaminofluorene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
2-Chloronaphthalene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
2-Chlorophenol	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
2-Methylnaphthalene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
2-Methylphenol	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
2-Naphthylamine	8270C	ug/l	< 5.43	5.43	< 25.0	5.00
2-Nitroaniline	8270C	ug/l	< 27.2	27.2	< 25.0	25.0
2-Nitrophenol	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
2-Picoline	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
3,3'-Dichlorobenzidine	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
3,3'-Dimethylbenzidine	8270C	ug/l	< 27.2	27.2	< 25.0	25.0
3,5,5-Trimethyl-2-Cyclohexene-1-One	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
3+4-Methylphenols	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
3-Methylchloranthrene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
3-Nitroaniline	8270C	ug/l	< 27.2	27.2	< 25.0	25.0
4,6-Dinitro-2-Methylphenol	8270C	ug/l	< 27.2	27.2	< 25.0	25.0
4-Aminobiphenyl	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
4-Bromophenyl Phenyl Ether	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
4-Chloro-3-Methylphenol	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
4-Chlorophenyl Phenyl Ether	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
4-Dimethylaminoazobenzene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
4-Nitrophenol	8270C	ug/l	< 27.2	27.2	< 25.0	25.0
4-Nitroquinoline-N-Oxide	8270C	ug/l	< 21.7	21.7	< 20.0	20.0
5-Nitro-O-Toluidine	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
7,12-Dimethylbenz(A)Anthracene	8270C	ug/l	< 27.2	27.2	< 25.0	25.0
A,A-Dimethylphenethylamine	8270C	ug/l	< 27.2	27.2	< 25.0	25.0
Acenaphthene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Acenaphthylene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Acetophenone	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Aniline	8270C	ug/l	< 10.9	10.9	< 10.0	10.0
Anthracene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Aramite	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Benzo (A) Anthracene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Benzo (A) Pyrene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Benzo (B) Fluoranthene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Benzo (G,H,I) Perylene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Benzo (K) Fluoranthene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Benzyl Alcohol	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Benzyl Butyl Phthalate	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Bis (2-Chloroisopropyl) Ether	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Bis(2-Chloroethoxy)Methane	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Bis(2-Chloroethyl)Ether	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Bis(2-Ehtylhexyl)Phthalate	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Chlordecone (Kepone)	8270C	ug/l	< 21.7	21.7	< 20.0	20.0
Chlorobenzilate	8270C	ug/l	< 5.43	5.43	< 5.00	5.00

Sample ID			MW-5A		OW-1A	
Sample Date			07/14/10		07/14/10	
Sample Time			11:00		11:40	
Semi-Volatile Organic Compounds (cont'd)	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Chlorophenols	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Chrysene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Cygon	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Diallate	8270C	ug/l	< 27.2	27.2	< 25.0	25.0
Dibenzo (A,H) Anthracene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Dibenzofuran	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Diethyl Phthalate	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Dimethyl Phthalate	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Di-N-Butylphthalate	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Di-N-Octyl Phthalate	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Diphenylamine	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Disulfoton	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Ethyl Methanesulfonate	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Famphur	8270C	ug/l	< 10.9	10.9	< 10.0	10.0
Fluoranthene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Fluorene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Hexachlorobenzene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Hexachlorobutadiene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Hexachlorocyclopentadiene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Hexachloroethane	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Hexachlorophene (Hcp)	8270C	ug/l	< 54.3	54.3	< 50.0	50.0
Hexachloropropene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Indeno (1,2,3-Cd) Pyrene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Isodrin	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Isosafrole	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
M-Dinitrobenzene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Methanamine, N-Methyl-N-Nitroso	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Methapyrilene	8270C	ug/l	< 27.2	27.2	< 25.0	25.0
Methyl Methanesulfonate	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Methyl Parathion	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Naphthalene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Nitrobenzene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
N-Nitrosodiethylamine	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
N-Nitrosodi-N-Butylamine	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
N-Nitroso-Di-N-Propylamine	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
N-Nitrosodiphenylamine	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
N-Nitrosomorpholine	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
N-Nitroso-N-Methylethylamine	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
N-Nitrosopiperidine	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
N-Nitrosopyrrolidine	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
O,O,O-Triethyl Phosphorothioate	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
O,O-Diethyl O-Pyrazinyl Phosphorothioate	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
O-Toluidine	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Parathion	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
P-Chloroaniline	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Pentachlorobenzene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Pentachloroethane	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Pentachloronitrobenzene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Pentachlorophenol	8270C	ug/l	< 27.2	27.2	< 25.0	25.0
Phenacetin	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Phenanthrene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Phenol	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Phorate	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
P-Nitroaniline	8270C	ug/l	< 27.2	27.2	< 25.0	25.0
P-Phenylenediamine	8270C	ug/l	< 109	109	< 100	100
Propyzamide	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Pyrene	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Pyridine	8270C	ug/l	< 27.2	27.2	< 25.0	25.0
Safrole	8270C	ug/l	< 5.43	5.43	< 5.00	5.00
Sulfotep	8270C	ug/l	< 5.43	5.43	< 5.00	5.00

2010
Groundwater Extended Parameters Data Summary Table
Aerojet Facility
Orange County, Virginia

Sample ID			MW-5A		OW-1A	
Sample Date			07/14/10		07/14/10	
Sample Time			11:00		11:40	
Metals	Analytical Method	Unit	Result	Reporting Limit	Result	Reporting Limit
Aluminum	6010B	mg/L	0.143	0.100	1.00	0.100
Antimony	6010B	mg/L	< 0.200	0.200	< 0.200	0.200
Arsenic	6020	mg/L	0.0821	0.00100	0.0582	0.00100
Arsenic, Dissolved	6020	mg/L	< 0.00100	0.00100	< 0.00100	0.00100
Barium	6010B	mg/L	< 0.0100	0.0100	0.0258	0.0100
Beryllium	6010B	mg/L	< 0.0100	0.0100	< 0.0100	0.0100
Cadmium	6010B	mg/L	< 0.0100	0.0100	< 0.0100	0.0100
Calcium	6010B	mg/L	0.894	0.200	3.81	0.200
Cobalt	6010B	mg/L	< 0.0200	0.0200	< 0.0200	0.0200
Copper	6010B	mg/L	< 0.0200	0.0200	< 0.0200	0.0200
Iron	6010B	mg/L	< 0.100	0.100	1.13	0.100
Magnesium	6010B	mg/L	0.807	0.500	0.647	0.500
Manganese	6010B	mg/L	< 0.0100	0.0100	0.0438	0.0100
Mercury	7470A	mg/L	< 0.000200	0.000200	< 0.000200	0.000200
Nickel	6010B	mg/L	< 0.0400	0.0400	< 0.0400	0.0400
Potassium	6010B	mg/L	< 1.00	1.00	< 1.00	1.00
Selenium	6020	mg/L	< 0.00100	0.00100	< 0.00100	0.00100
Silver	6010B	mg/L	< 0.0100	0.0100	< 0.0100	0.0100
Sodium	6010B	mg/L	1.76	0.500	1.39	0.500
Thallium	6010B	mg/L	< 1.00	1.00	< 1.00	1.00
Tin	6010B	mg/L	< 0.500	0.500	< 0.500	0.500
Vanadium	6010B	mg/L	< 0.0100	0.0100	< 0.0100	0.0100
Zinc	6010B	mg/L	< 0.0200	0.0200	< 0.0200	0.0200

-- = Not Analyzed/Not Applicable
mg/l = milligrams per liter
ug/l = microgrmas per liter
< = analyte not detected at or above the specified laboratory reporting limit

ATTACHMENT E

BASELINE SOIL MONITORING DATA 1989 - 1990

(Electronic Format Only – Refer to Attachment C)

1989 - 1990 Baseline Soil Sampling Results
Aerojet Facility
Orange County, Virginia

Location ID			**A1A**	**A1A**	**A1A**	**A1A**	**A1B**	**A1B**	**A2A**	**A2A**
Sample Name			**S03038912**	**SO2728901**	**ORG-A1A-02**	**ORG-A1A-05-10**	**S07278901**	**ORG-A1B-02**	**S03288901**	**S08098901**
Sample Date			**03/02/89**	**07/27/89**	**10/23/89**	**01/22/90**	**07/27/89**	**10/23/89**	**03/28/89**	**08/09/89**
Sample Time			**13:38**	**11:10**	**11:34**	**13:40**	**11:10**	**11:34**	**14:07**	**13:10**
Indicator Compounds	Analytical Method	Unit								
ALUMINUM	SW6010 / SW9-4.2	mg/kg	< 10.5	6510 E	--	13.3	--	--	23	< 8.4
AMMONIA NITROGEN	305.3	mg/kg	1.77	1.84	< 0.57	1.22	1.84	0.8	3.09	0.924
ARSENIC	SW9045	mg/kg	< 3.3	0.76 B	--	--	0.76	--	21	4.0
CHROMIUM	SW6010	mg/kg	26	14.0	--	29.2	14	--	18	22.1
LEAD	SW6010	mg/kg	8.2	12.2	--	12.9	12.3	--	11	8.9
FLUORIDE	340.2	mg/kg	--	1.68	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	< 48.1	--	--	--	--	--	--
pH	150.1	pH units	7.07	7.37	7.71	7.36	7.37	7.62	7.62	7.47
Extended Metals Analysis										
ANTIMONY	SW6010	mg/kg	--	< 6.9	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	21.5 B	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	< 0.49	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	< 0.98	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	1050 BE	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	< 1.5	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	11.3	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	< 0.55	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	25800 E	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	409 BE	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	53.1 E	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	< 0.12	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	< 3.2	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	338 B	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	< 0.73	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	1.2 B	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	69.6 B	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	< 0.24	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	< 14.8	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	16.7	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	10.3	--	--	--	--	--	--

1989 - 1990 Baseline Soil Sampling Results
Aerojet Facility
Orange County, Virginia

Location ID			**A2A**	**A2A**	**A2B**	**A3A**	**A3A**	**A4A**	**A4A**	**A4A**
Sample Name			**ORG-A2A-03**	**ORG-A2A-06-10**	**ORG-A2B-03**	**S06218901**	**SA-3092989**	**S03288902**	**S08098902**	**ORG-A4A-03-10**
Sample Date			**11/14/89**	**02/28/90**	**11/14/89**	**06/21/89**	**09/29/89**	**03/28/89**	**08/09/89**	**11/14/89**
Sample Time			**16:30**	**10:50**	**16:25**	**13:13**	**15:40**	**14:13**	**13:16**	**16:13**
Indicator Compounds	Analytical Method	Unit								
ALUMINUM	SW6010 / SW9-4.2	mg/kg	20.2	< 9.3	20.5	17.4	30	9.1	71.8	24.3
AMMONIA NITROGE	305.3	mg/kg	4.79	--	1.31	0.99	1.07	3.42	0.922	2.68
ARSENIC	SW9045	mg/kg	--	--	--	< 3.7	--	11	< 3.3	--
CHROMIUM	SW6010	mg/kg	25.6	24.9	20.4	19.9	26.2	11	22.6	16.6
LEAD	SW6010	mg/kg	12.8	7.7	13.3	--	9.4	9.4	12.4	14.2
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--	--
pH	150.1	pH units	7.4	--	7.49	7	--	7.65	7.67	8.16
Extended Metals Analysis										
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	0.55	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--	--

1989 - 1990 Baseline Soil Sampling Results
Aerojet Facility
Orange County, Virginia

Location ID			A4A	AA1	AA1	A4B	B1A	B1A	B2A
Sample Name			ORG-A4A-06-10	ORG-AA1-05-10	ORG-AA1-06-10	ORG-A4B-06-10	S06218902	SB-1092989	S03038911
Sample Date			02/28/90	01/24/90	02/26/90	02/28/90	06/21/89	09/29/89	03/03/89
Sample Time			11:00	11:15	16:40	11:05	12:00	16:15	13:32
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / SW9-4.2	mg/kg	< 9.0	184	160	< 9.3	55.9	19.2	< 8.09
AMMONIA NITROGE	305.3	mg/kg	--	2.07	1.69	--	1.77	8.20	2.07
ARSENIC	SW9045	mg/kg	--	--	--	--	9.8	--	< 3.3
CHROMIUM	SW6010	mg/kg	17.5	14.2	14.0	21.3	21.0	22.1	21
LEAD	SW6010	mg/kg	8.7	10.7	8.2	9.1	--	13.6	12
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	--	4.29	4.35	--	6.06	--	5.77
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	0.57	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--

1989 - 1990 Baseline Soil Sampling Results
Aerojet Facility
Orange County, Virginia

Location ID			**B2A**	**B2A**	**B2A**	**B2B**
Sample Name			**S07278902**	**ORG-B2A-02**	**ORG-B2A-05-10**	**ORG-B2B-05-10**
Sample Date			**07/27/89**	**10/23/89**	**01/22/90**	**01/22/90**
Sample Time			**11:30**	**11:20**	**14:05**	**14:05**
Indicator Compounds	Analytical Method	Unit				
ALUMINUM	SW6010 / SW9-4.2	mg/kg	155	--	13.7	13.7
AMMONIA NITROGEN	305.3	mg/kg	9.05	2.28	5.67	6.81
ARSENIC	SW9045	mg/kg	5.7	--	--	--
CHROMIUM	SW6010	mg/kg	27.8	--	17.3	15.9
LEAD	SW6010	mg/kg	14.5	--	11.6	12.2
FLUORIDE	340.2	mg/kg	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--
pH	150.1	pH units	6.24	7.32	7.01	6.87
Extended Metals Analysis						
ANTIMONY	SW6010	mg/kg	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--

1989 - 1990 Baseline Soil Sampling Results
Aerojet Facility
Orange County, Virginia

Location ID			B3A	B3A	B3A	B3A	B4A	B4A	B4A	B4A
Sample Name			S03288904	S08098903	ORG-B3A-03-10	ORG-B3A-06-10	S03288903	S08098904	ORG-B4A-03-10	ORG-B4A-06-10
Sample Date			03/28/89	08/09/89	11/14/89	02/28/90	03/28/89	08/09/89	11/14/89	02/28/90
Sample Time			14:29	13:35	16:05	15:20	14:21	13:41	15:57	11:30
Indicator Compounds	Analytical Method	Unit								
ALUMINUM	SW6010 / SW9-4.2	mg/kg	14	83.8	16.8	< 9	11	< 8.0	< 9.5	22.5
AMMONIA NITROGEN	305.3	mg/kg	5.68	1.33	2.93	--	2.96	0.808	1.79	--
ARSENIC	SW9045	mg/kg	6.6	< 3.3	--	--	9.5	< 3.2	--	--
CHROMIUM	SW6010	mg/kg	13	16.6	14.0	15.8	11	32.4	18.6	15.9
LEAD	SW6010	mg/kg	8.8	11.3	11.2	4.6	10	12.6	19.9	13.8
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--	--
pH	150.1	pH units	6.15	6.80	6.93	--	6.87	6.44	6.96	--
Extended Metals Analysis										
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--	--

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Location ID			**C4A**	**C4A**	**C4A**	**C4A**	**D2A**	**D2A**	**D3A**
Sample Name			**S03038910**	**S07278904**	**ORG-C4A-02**	**ORG-C4A-05-10**	**S06218903**	**SD-2092989**	**S03038909**
Sample Date			**03/03/89**	**07/27/89**	**10/23/89**	**01/22/90**	**06/21/89**	**09/29/89**	**03/03/89**
Sample Time			**13:24**	**11:50**	**11:07**	**14:25**	**12:21**	**16:45**	**13:19**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / SW9-4.2	mg/kg	8.09	70.4	--	52.8	111	37.4	16.4
AMMONIA NITROGE	305.3	mg/kg	1.67	2.61	9.92	2.96	2.14	14.1	2.09
ARSENIC	SW9045	mg/kg	3.5	< 3.6	--	--	9.1	--	< 3.3
CHROMIUM	SW6010	mg/kg	14	20.3	--	21.1	17.1	22.2	16
LEAD	SW6010	mg/kg	12	18.5	--	18.4	--	14.1	8.4
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	5.04	4.99	6.48	5.72	4.54	--	5.60
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	< 0.52	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--

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Location ID			D3A	D3A	D3A	DD1	DD1	E4A	E4A
Sample Name			S07278905	ORG-D3A-02	ORG-D3A-05	ORG-DD1-05	ORG-DD1-06	S06288907	SE-4092989
Sample Date			07/27/89	10/23/89	01/22/90	01/24/90	02/26/90	06/28/89	09/29/89
Sample Time			12:00	10:57	14:40	11:50	16:40	14:22	16:45
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / SW9-4.2	mg/kg	349	--	23.6	401	396	63.8	71.5
AMMONIA NITROGE	305.3	mg/kg	2.53	10	4.94	4.62	4.68	2.07	5.86
ARSENIC	SW9045	mg/kg	4.8	--	--	--	--	< 1.8	--
CHROMIUM	SW6010	mg/kg	13.9	--	18.1	12.6	13.0	32.0	23.5
LEAD	SW6010	mg/kg	19.4	--	16.2	17.0	23.3	< 3.1	10.4
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	4.57	6.21	5.87	3.89	4.18	5.24	--
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--

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Location ID			**EE1**	**EE1**	**F1A**	**F1A**	**F1A**	**F1A**	**F2A**	**F2A**
Sample Name			**ORG-EE1-05-10**	**ORG-EE1-06-10**	**S03288905**	**S08098905**	**ORG-F1A-03-10**	**ORG-F1A-06-10**	**S03038908**	**S02728903**
Sample Date			**01/24/90**	**02/26/90**	**03/28/89**	**08/09/89**	**11/14/89**	**02/28/90**	**03/03/89**	**07/27/89**
Sample Time			**13:40**	**15:45**	**14:41**	**13:54**	**15:50**	**11:40**	**13:10**	**11:39**
Indicator Compounds	Analytical Method	Unit								
ALUMINUM	SW6010 / SW9-4.2	mg/kg	473	592	16	< 8.0	20.7	29.8	< 7.5	11900 E
AMMONIA NITROGE	305.3	mg/kg	2.26	2.07	3.31	0.985	1.31	--	< 0.58	1.91
ARSENIC	SW9045	mg/kg	--	--	11	< 3.2	--	--	3.5	2.2 B
CHROMIUM	SW6010	mg/kg	23.9	23.5	16	16.2	17.7	25.5	14	17.6
LEAD	SW6010	mg/kg	8.2	10.8	9.6	11.9	12.1	13.0	8.0	8.6 S
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--	< 0.61
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--	< 49.2
pH	150.1	pH units	4.89	5.08	7.38	7.17	7.66	--	6.36	6.08
Extended Metals Analysis										
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--	< 6.9
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--	61.5
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	< 0.50
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	--	< 0.99
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--	1560 E
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--	3.2 B
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--	8.2
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--	< 0.57
IRON	SW6010	mg/kg	--	--	--	--	--	--	--	22700 E
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--	460 BE
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--	107 E
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--	0.13
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--	5.2 B
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--	779 B
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--	< 0.74
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--	0.91 B
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--	38.1 B
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	< 0.25
TIN	SW6010	mg/kg	--	--	--	--	--	--	--	< 14.9
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--	23.8
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--	16.3

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Location ID			**F2A**	**F2A**	**F3A**	**F3A**	**F4A**	**F4A**
Sample Name			**ORG-F2A-02**	**ORG-F2A-05-10**	**S06218904**	**SF-3092989**	**S03288906**	**S08098906**
Sample Date			**10/23/89**	**01/22/90**	**06/21/89**	**09/29/89**	**03/28/89**	**08/09/89**
Sample Time			**10:52**	**14:50**	**13:22**	**17:10**	**14:51**	**14:02**
Indicator Compounds	Analytical Method	Unit						
ALUMINUM	SW6010 / SW9-4.2	mg/kg	--	< 9.3	85.1	31.3	16	< 8.4
AMMONIA NITROGE	305.3	mg/kg	1.85	2.38	1.13	2.31	4.17	1.18
ARSENIC	SW9045	mg/kg	--	--	12.3	--	16	< 3.3
CHROMIUM	SW6010	mg/kg	--	22.7	19.9	19.3	10	20.3
LEAD	SW6010	mg/kg	--	16.5	--	8.9	8.6	11.4
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--
pH	150.1	pH units	7.3	7.18	6.46	--	7.65	6.79
Extended Metals Analysis								
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	< 0.50	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--

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Aerojet Facility
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Location ID			F4A	F4A	G1A	G1A	G1A	G1A	G2A
Sample Name			ORG-F4A-03-10	ORG-F4A-06-10	S03038907	S07278906	ORG-G1A-02	ORG-G1A-05-10	S06218905
Sample Date			11/14/89	02/28/90	03/03/89	07/27/89	10/23/89	01/22/90	06/21/89
Sample Time			15:45	13:35	12:46	13:00	10:45	15:00	13:30
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / SW9-4.2	mg/kg	32.6	39.6	< 7.5	63.0	--	< 9.6	15.1
AMMONIA NITROGEN	305.3	mg/kg	2.39	--	< 0.58	1.49	4.61	2.17	1.21
ARSENIC	SW9045	mg/kg	--	--	< 3.3	< 3.6	--	--	9.7
CHROMIUM	SW6010	mg/kg	16.8	20.9	17	20.5	--	54.1	21.6
LEAD	SW6010	mg/kg	29.3	11.3	9.6	13.5	--	13.9	--
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	7.13	--	5.40	5.54	6.84	6.95	6.17
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	< 0.52
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--

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Location ID			**G2A**	**G3A**	**G3A**	**G3A**	**G3A**	**G4A**	**G4A**
Sample Name			**SG-2092989**	**S03288907**	**S08098907**	**ORG-G3A-03-10**	**ORG-G3A-06-10**	**S03038906**	**S02728907**
Sample Date			**09/29/89**	**03/28/89**	**08/09/89**	**11/14/89**	**02/28/90**	**03/03/89**	**07/27/89**
Sample Time			**17:10**	**15:09**	**14:16**	**15:32**	**13:48**	**12:36**	**13:02**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / SW9-4.2	mg/kg	39.5	18	< 8.3	23.6	12.3	< 7.5	12900 E
AMMONIA NITROGEN	305.3	mg/kg	1.42	2.15	1.09	1.72	--	< 0.59	2.70
ARSENIC	SW9045	mg/kg	--	21	< 3.3	--	--	6.7	1.7 B
CHROMIUM	SW6010	mg/kg	23.9	14	29.7	20.3	22.1	31	19.1
LEAD	SW6010	mg/kg	12.1	9.4	15.1	16.0	10.1	13	12.2 S
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	--	6.91	6.57	7.22	--	6.87	--
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	< 6.5
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	64.2
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	0.65 B
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	< 0.93
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	1100 BE
COBALT	SW6010	mg/kg	--	--	--	--	--	--	3.7 B
COPPER	SW6010	mg/kg	--	--	--	--	--	--	9.0
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	< 0.56
IRON	SW6010	mg/kg	--	--	--	--	--	--	23300 E
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	459 BE
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	97.4 E
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	< 0.12
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	4.9 B
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	762 B
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	< 0.70
SILVER	SW6010	mg/kg	--	--	--	--	--	--	1.5 B
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	27.5 B
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	< 0.23
TIN	SW6010	mg/kg	--	--	--	--	--	--	< 14.0
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	27.5
ZINC	SW6010	mg/kg	--	--	--	--	--	--	16.2

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Location ID			G4A	G4A	H1A	H1A	H2A	H2A	H2A	H2A
Sample Name			**ORG-G4A-02**	**ORG-G4A-05-10**	**S06218906**	**SH-1092989**	**S03288908**	**S08098908**	**ORG-H2A-02**	**ORG-H2A-03-10**
Sample Date			**10/23/89**	**01/22/90**	**06/21/89**	**09/30/89**	**03/28/89**	**08/09/89**	**10/23/89**	**11/14/89**
Sample Time			**10:40**	**15:25**	**14:04**	**17:43**	**15:14**	**14:26**	**10:32**	**15:25**
Indicator Compounds	Analytical Method	Unit								
ALUMINUM	SW6010 / SW9-4.2	mg/kg	--	< 9.2	52.9	27.6	21	< 9.0	--	13.7
AMMONIA NITROGEN	305.3	mg/kg	1.91	0.97	1.07	2.43	2.21	1.28	1.22	< 0.6
ARSENIC	SW9045	mg/kg	--	--	< 3.8	--	17	< 3.6	--	--
CHROMIUM	SW6010	mg/kg	--	28.1	21.2	22.0	12	12.3	--	18.0
LEAD	SW6010	mg/kg	--	22.0	--	10.5	7.0	22.9	--	15.2
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--	--
pH	150.1	pH units	7.43	6.96	6.06	--	7.76	7.15	7.29	7.28
Extended Metals Analysis										
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	< 0.51	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--	--

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Location ID			**H2A**	**H3A**	**H3A**	**H3A**	**H4A**	**H4A**	**HH1**
Sample Name			**ORG-H2A-06-10**	**S03038905**	**S07278908**	**ORG-H3A-05-10**	**S06218907**	**SH-4092989**	**ORG-HH1-05-10**
Sample Date			**02/28/90**	**03/03/89**	**07/27/89**	**01/23/90**	**06/21/89**	**09/29/89**	**01/24/90**
Sample Time			**13:55**	**12:22**	**13:10**	**10:30**	**13:57**	**17:43**	**10:30**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / SW9-4.2	mg/kg	21.6	9.28	212	< 9.6	27.9	28.8	298
AMMONIA NITROGEN	305.3	mg/kg	--	< 0.58	1.50	0.73	1.29	1.46	2.38
ARSENIC	SW9045	mg/kg	--	< 3.3	5.3	--	9.8	--	--
CHROMIUM	SW6010	mg/kg	17.0	20	18.6	24.7	28.5	26.1	34.5
LEAD	SW6010	mg/kg	9.6	6.9	11.6	13.5	--	11.4	< 5.7
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	--	6.26	6.69	7.00	6.81	--	4.65
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	0.60	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--

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Location ID			**HH1**	**I4A**	**I4A**	**I4A**	**I4A**	**J2A**	**J2A**
Sample Name			**ORG-HH1-06-10**	**S03308901**	**S08108916**	**ORG-I1A-03-10**	**ORG-I4A-06-10**	**S03288909**	**S08108915**
Sample Date			**02/26/90**	**03/30/89**	**08/10/89**	**11/14/89**	**02/28/90**	**03/28/89**	**08/10/89**
Sample Time			**13:05**	**13:35**	**15:52**	**15:20**	**14:10**	**15:19**	**15:42**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / SW9-4.2	mg/kg	232	< 7.5	< 8.3	18.3	13.5	16	14.6
AMMONIA NITROGEN	305.3	mg/kg	14.7	1.88	1.93	1.94	--	2.1	3.68
ARSENIC	SW9045	mg/kg	--	11	< 3.3	--	--	14	< 3.6
CHROMIUM	SW6010	mg/kg	9.99	14	20.1	17.8	17.5	16	16.5
LEAD	SW6010	mg/kg	12.2	12	11.4	18.9	9.4	9.2	9.3
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	4.8	7.55	7.38	7.34	--	6.38	6.03
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--

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Location ID			**J2A**	**J2A**	**J3A**	**J3A**	**K4A**	**K4A**	**K4A**
Sample Name			**ORG-J2A-03-10**	**ORG-J2A-06-10**	**S06288908**	**SJ-3092989**	**S03038904**	**S07278910**	**ORG-K4A-02**
Sample Date			**11/14/89**	**02/28/90**	**06/28/89**	**09/29/89**	**03/03/89**	**07/27/89**	**10/23/89**
Sample Time			**14:58**	**14:18**	**14:38**	**18:00**	**12:15**	**13:30**	**10:22**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / SW9-4.2	mg/kg	24.3	< 9.9	34.8	21.0	< 7.5	< 9.6	--
AMMONIA NITROGE	305.3	mg/kg	3.74	--	0.86	2.07	< 0.59	1.58	2.52
ARSENIC	SW9045	mg/kg	--	--	< 2.0	--	< 3.3	< 3.8	--
CHROMIUM	SW6010	mg/kg	17.5	15.6	22.7	22.0	12	14.6	--
LEAD	SW6010	mg/kg	14.7	11.7	< 3.4	8.6	7.6	11.8	--
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	6.69	--	6.96	--	6.03	6.34	7.3
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--

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Location ID			K4A	L1A	L1A	L1A	L1A	L2A	L2A	L2A
Sample Name			ORG-K4A-05-10	S03288910	S08108914	ORG-L1A-03-10	ORG-L1A-06-10	S03038903	S02728909	ORG-L2A-02
Sample Date			01/23/90	03/28/89	08/10/89	11/14/89	02/28/90	03/03/89	07/27/89	10/23/89
Sample Time			15:10	15:26	15:34	14:47	14:27	12:05	13:20	10:18
Indicator Compounds	Analytical Method	Unit								
ALUMINUM	SW6010 / SW9-4.2	mg/kg	16.9	11	< 8.1	18.4	< 9.4	8.09	12300 E	--
AMMONIA NITROGEN	305.3	mg/kg	2.36	2.99	2.60	1.67	--	<0.60	3.12	3.12
ARSENIC	SW9045	mg/kg	--	14	< 3.2	--	--	< 3.3	2.2 B	--
CHROMIUM	SW6010	mg/kg	27.1	16	16.1	36.4	21.5	14	13.8	--
LEAD	SW6010	mg/kg	14.5	8.8	9.1	14.8	9.2	12	15.2	--
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--	--
pH	150.1	pH units	7.05	7.1	6.25	7.17	--	5.77	6.67	6.77
Extended Metals Analysis										
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	< 7.7	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	87.0	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	0.76 B	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	< 1.1	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	1810 E	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	8.1 B	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	9.2	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	< 0.68	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	17000 E	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	752 BE	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	304 E	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	< 0.14	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	6.9 B	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	1100 B	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	< 0.81	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	0.91 B	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	80.6 B	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	< 0.27	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	< 16.5	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	22.2	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	19.6	--

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Location ID			L2A	L3A	L3A	L3A	L3A	L4A	L4A	M1A
Sample Name			ORG-L2A-05-10	S03308902	S08108913	ORG-L3A-03-10	ORG-L3A-06-10	S06218908	SL-4092989	S03038901
Sample Date			01/23/90	03/30/89	08/10/89	11/14/89	02/28/90	06/21/89	09/29/89	03/03/89
Sample Time			15:00	12:41	15:32	14:35	14:45	14:17	18:00	11:53
Indicator Compounds	Analytical Method	Unit								
ALUMINUM	SW6010 / SW9-4.2	mg/kg	< 9.7	11	89.4	24.1	< 9.8	24.3	30.1	88.8
AMMONIA NITROGE	305.3	mg/kg	3.84	1.07	1.89	2.11	--	1.24	2.21	1.42
ARSENIC	SW9045	mg/kg	--	25	< 3.7	--	--	< 3.8	--	< 3.3
CHROMIUM	SW6010	mg/kg	17.7	14	12.8	13.2	20.1	37.0	27.8	23
LEAD	SW6010	mg/kg	15.9	8.5	4.9	32.5	6.1	9	7.2	9.0
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--	--
pH	150.1	pH units	6.92	6.69	6.85	7.17	--	5.08	--	5.35
Extended Metals Analysis										
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	< 0.51	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--	--

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Location ID			**M1A**	**M1A**	**M1A**	**M2A**	**M2A**	**M3A**	**M3A**	**M3A**
Sample Name			**S07278911**	**ORG-M1A-02**	**ORG-M1A-05-10**	**S06288909**	**SM-2092989**	**S03038902**	**S07278912**	**ORG-M3A-02**
Sample Date			**07/27/89**	**10/18/89**	**01/23/90**	**06/28/89**	**09/29/89**	**03/03/89**	**07/27/89**	**10/18/89**
Sample Time			**13:46**	**15:30**	**14:45**	**14:52**	**18:35**	**11:58**	**13:50**	**15:12**
Indicator Compounds	Analytical Method	Unit								
ALUMINUM	SW6010 / SW9-4.2	mg/kg	123	< 9.6	168	19.1	21.7	< 7.5	35.7	< 9.6
AMMONIA NITROGEN	305.3	mg/kg	3.15	4.25	16.7	1.02	6.24	< 0.58	1.69	1.79
ARSENIC	SW9045	mg/kg	< 3.7	26.2	--	< 1.9	--	7.3	< 3.8	44.6
CHROMIUM	SW6010	mg/kg	17.3	27.6	20.5	29.2	43.4	33	41.7	32.8
LEAD	SW6010	mg/kg	9.3	12.4	11.9	< 3.4	14.1	10	8.8	14
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--	--
pH	150.1	pH units	4.84	5.6	4.94	6.82	--	6.71	5.59	7.05
Extended Metals Analysis										
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--	--

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Location ID			**M3A**	**M4A**	**M4A**	**M4A**	**M4A**	**N1A**	**N1A**	**N2A**
Sample Name			**ORG-M3A-05-10**	**S03308903**	**S08108912**	**ORG-M4A-03-10**	**ORG-M4A-06-10**	**S06218909**	**SN-1092989**	**S03308904**
Sample Date			**01/23/90**	**03/30/89**	**08/10/89**	**11/14/89**	**02/28/90**	**06/21/89**	**09/29/89**	**03/30/89**
Sample Time			**14:35**	**13:46**	**15:15**	**14:25**	**15:15**	**15:15**	**18:35**	**13:52**
Indicator Compounds	Analytical Method	Unit								
ALUMINUM	SW6010 / SW9-4.2	mg/kg	< 9.4	70	< 10.3	< 10.6	32.7	41.2	57.6	30
AMMONIA NITROGE	305.3	mg/kg	1.53	0.94	3.50	1.54	--	1.52	1.23	1.1
ARSENIC	SW9045	mg/kg	--	11	< 4.1	--	--	18.4	--	54
CHROMIUM	SW6010	mg/kg	30.9	13	15.8	20.5	17.1	34.0	41.2	23
LEAD	SW6010	mg/kg	13.5	8.4	11.3	19.5	10.1	--	15.1	8.4
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--	--
pH	150.1	pH units	6.74	6.15	4.73	6.42	--	6.46	--	6.48
Extended Metals Analysis										
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	< 0.53	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--	--

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Location ID			**N2A**	**N2A**	**N2A**	**N3A**	**N3A**	**N4A**	**N4A**	**N4A**
Sample Name			**S08108911**	**ORG-N2A-03-10**	**ORG-N2A-06-10**	**S06218910**	**SN-3093089**	**S03028913**	**S02728913**	**ORG-N4A-02**
Sample Date			**08/10/89**	**11/14/89**	**02/28/90**	**06/21/89**	**09/30/89**	**03/02/89**	**07/27/89**	**10/18/89**
Sample Time			**14:41**	**14:17**	**15:30**	**15:12**	**11:45**	**15:22**	**14:10**	**15:07**
Indicator Compounds	Analytical Method	Unit								
ALUMINUM	SW6010 / SW9-4.2	mg/kg	22.9	25.2	< 9.6	26.4	25.5	22.3	11100 E	< 9.1
AMMONIA NITROGEN	305.3	mg/kg	1.67	1.15	--	1.01	4.09	< 0.56	--	1.55
ARSENIC	SW9045	mg/kg	4.8	--	--	8.2	5.3	< 3.3	4.1	21.7
CHROMIUM	SW6010	mg/kg	30.9	31.1	31.6	16.9	14.4	23	21.1	20.5
LEAD	SW6010	mg/kg	9.9	11.1	7.7	--	10.5	12	7.9 S	8.1
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--	--
pH	150.1	pH units	5.98	6.67	--	6.88	--	6.57	--	7.26
Extended Metals Analysis										
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	< 6.9	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	49.6	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	0.77 B	--
CADMIUM	SW6010	mg/kg	--	--	--	< 0.49	--	--	1.0 B	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	8330 E	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	6.8 B	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	18.0	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	33500 E	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	3910 E	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	184 E	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	< 0.12	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	5.5 B	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	645 B	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	< 0.73	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	1.4 B	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	66.4 B	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	< 0.24	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	< 14.8	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	24.7	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	21.5	--

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Location ID			**N4A**	**O1A**	**O1A**	**O1A**	**O1A**	**O2A**	**O2A**
Sample Name			**ORG-N4A-05-10**	**S03308905**	**S08108908**	**ORG-O1A-03-10**	**ORG-O1A-06-10**	**S03028914**	**S02728914**
Sample Date			**01/23/90**	**03/30/89**	**08/10/89**	**11/14/89**	**02/28/90**	**03/02/89**	**07/27/89**
Sample Time			**14:20**	**13:57**	**13:48**	**14:10**	**15:50**	**15:16**	**14:15**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / SW9-4.2	mg/kg	< 8.9	26	35.9	17.8	12.0	8.09	12100 E
AMMONIA NITROGE	305.3	mg/kg	1.75	0.77	1.20	0.83	--	< 0.62	4.00
ARSENIC	SW9045	mg/kg	--	29	< 3.7	--	--	8.9	2.0 B
CHROMIUM	SW6010	mg/kg	21.9	21	17.2	29.3	23.6	13	19.7
LEAD	SW6010	mg/kg	11.7	6.6	9.2	15.2	14.0	7.7	11.0 S
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	6.99	5.52	5.69	6.29	--	5.67	6.74
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	< 7.3
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	58.5
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	1.2 B
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	< 1.0
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	1230 BE
COBALT	SW6010	mg/kg	--	--	--	--	--	--	4.6 B
COPPER	SW6010	mg/kg	--	--	--	--	--	--	10.5
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	24300 E
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	650 BE
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	146 E
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	< 0.13
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	6.0 B
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	549 B
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	< 0.77
SILVER	SW6010	mg/kg	--	--	--	--	--	--	0.99 B
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	15.9 B
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	< 0.26
TIN	SW6010	mg/kg	--	--	--	--	--	--	< 15.6
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	27.5
ZINC	SW6010	mg/kg	--	--	--	--	--	--	17.2

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Location ID			O2A	O2A	O3A	O3A	O3A	O3A	O4A
Sample Name			ORG-O2A-02-10	ORG-O2A-05-10	S03308906	S08108909	ORG-O3A-03-10	ORG-O3A-06-10	S06218911
Sample Date			10/23/89	01/23/90	03/30/89	08/10/89	11/14/89	02/28/90	06/21/89
Sample Time			15:00	14:10	14:06	14:01	13:50	16:15	15:25
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / SW9-4.2	mg/kg	< 9.8	16.7	18	< 8.2	16.7	< 9.3	29.1
AMMONIA NITROGEN	305.3	mg/kg	3.46	2.79	0.87	2.24	1.51	--	1.44
ARSENIC	SW9045	mg/kg	19.4	--	35	< 3.3	--	--	8.7
CHROMIUM	SW6010	mg/kg	16.4	27.0	18	26.6	32.5	23.6	81.1
LEAD	SW6010	mg/kg	7.9	13.0	9.8	9.9	15.2	12.4	--
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	6.79	6.75	6.07	6.14	7.1	--	5.93
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	<0.54
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--

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Location ID			**O4A**	**O4A**	**P4A**	**P4A**	**P4A**	**P4A**	**Q2A**	**Q2A**
Sample Name			**SO-4093089**	**SO-4093089**	**S03308907**	**S08108910**	**ORG-P4A-03-10**	**ORG-P4A-06-10**	**S06288906**	**SQ-2093089**
Sample Date			**09/30/89**	**09/30/89**	**03/30/89**	**08/10/89**	**11/14/89**	**02/28/90**	**06/28/89**	**09/30/89**
Sample Time			**12:10**	**12:10**	**14:13**	**14:08**	**14:03**	**10:45**	**14:07**	**12:30**
Indicator Compounds	Analytical Method	Unit								
ALUMINUM	SW6010 / SW9-4.2	mg/kg	--	26.4	23	9.6	39.5	< 9.5	21.7	42.4
AMMONIA NITROGEN	305.3	mg/kg	1.69	2.7	1.05	0.800	1.42	--	0.64	1.54
ARSENIC	SW9045	mg/kg	--	5.5	14	< 3.6	--	--	< 1.9	5.4
CHROMIUM	SW6010	mg/kg	--	21	16	21.6	25.2	32.5	25.8	19.3
LEAD	SW6010	mg/kg	--	11.8	9.4	16.5	13.7	3.5	< 3.4	6.2
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--	--
pH	150.1	pH units	--	--	7.29	7.55	7.34	--	5.82	--
Extended Metals Analysis										
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--	--

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Location ID			Q3A	Q3A	Q3A	Q3A	R4A	R4A	R4A	R4A
Sample Name			S03028916	S07278916	ORG-Q3A-02	ORG-Q3A-05-10	S03028915	S07278917	ORG-R4A-02	ORG-R4A-05-10
Sample Date			03/02/89	07/27/89	10/18/89	01/23/90	03/02/89	07/27/89	10/18/89	01/23/90
Sample Time			15:08	14:30	14:45	14:00	15:11	14:35	14:34	13:50
Indicator Compounds	Analytical Method	Unit								
ALUMINUM	SW6010 / SW9-4.2	mg/kg	9.28	84.6	< 9.9	< 10.1	8.09	31.8	< 9.2	11.6
AMMONIA NITROGE	305.3	mg/kg	19.0	1.60	1.06	3.69	< 0.58	1.07	1.63	2.26
ARSENIC	SW9045	mg/kg	< 3.3	22.9	20.1	--	< 3.3	7.6	20.4	--
CHROMIUM	SW6010	mg/kg	23	35.2	18.9	19.5	17	19.5	19.9	22.6
LEAD	SW6010	mg/kg	10	10.6	10.0	7.8	16	10.7	8.5	10.9
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--	--
pH	150.1	pH units	6.89	6.43	6.67	6.55	6.85	7.25	7.23	7.40
Extended Metals Analysis										
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--	--

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Location ID			**S1A**	**S1A**	**S1A**	**S1A**	**S2A**	**S2A**	**S2A**
Sample Name			**S03028917**	**S02728915**	**ORG-S1A-02**	**ORG-S1A-05-10**	**S03308908**	**S08108906**	**ORG-S2A-03-10**
Sample Date			**03/02/89**	**07/27/89**	**10/18/89**	**01/23/90**	**03/30/89**	**08/10/89**	**11/14/89**
Sample Time			**15:01**	**14:25**	**14:25**	**13:35**	**14:34**	**13:30**	**13:40**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / SW9-4.2	mg/kg	11.7	14100 E	< 9.6	< 9.2	40	< 8.9	19.1
AMMONIA NITROGEN	305.3	mg/kg	< 0.57	2.77	1.03	< 0.56	0.82	1.53	1.27
ARSENIC	SW9045	mg/kg	< 3.3	3.4	19.2	--	33	< 3.6	--
CHROMIUM	SW6010	mg/kg	22	22.1	15.9	21.5	28	23.1	23.3
LEAD	SW6010	mg/kg	11	12.1	10.2	10.6	8.6	9.1	11.7
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	< 51.6	--	--	--	--	--
pH	150.1	pH units	6.21	6.43	7.23	6.55	6.29	6.64	7.43
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	< 7.0	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	70.4	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	1.1 B	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	< 1.0	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	326 BE	--	--	--	--	--
COBALT	SW6010	mg/kg	--	4.4 B	--	--	--	--	--
COPPER	SW6010	mg/kg	--	9.4	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	< 0.60	--	--	--	--	--
IRON	SW6010	mg/kg	--	27300 E	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	472 BE	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	81.4 E	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	< 0.12	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	8.4 B	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	487 B	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	< 0.76	--	--	--	--	--
SILVER	SW6010	mg/kg	--	1.1 B	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	38.4 B	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	< 0.25	--	--	--	--	--
TIN	SW6010	mg/kg	--	< 15.1	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	29.5	--	--	--	--	--
ZINC	SW6010	mg/kg	--	20.2	--	--	--	--	--

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Location ID			**S2A**	**S3A**	**S3A**	**S4A**	**S4A**	**S4A**	**S4A**
Sample Name			**ORG-S2A-06-10**	**S06288905**	**ORG-S3A-02**	**S03308909**	**S08108907**	**ORG-S4A-03-10**	**ORG-S4A-06-10**
Sample Date			**02/28/90**	**06/28/89**	**10/18/89**	**03/30/89**	**08/10/89**	**11/14/89**	**02/28/90**
Sample Time			**10:55**	**13:53**	**14:05**	**14:39**	**13:38**	**13:47**	**11:03**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / SW9-4.2	mg/kg	< 9.98	37.6	9.7	21	< 8.4	14.5	< 9.3
AMMONIA NITROGE	305.3	mg/kg	--	0.98	1.84	0.96	2.27	2	--
ARSENIC	SW9045	mg/kg	--	< 1.8	17.3	18	< 3.3	--	--
CHROMIUM	SW6010	mg/kg	50.4	26.2	13.4	19	17.6	15.4	19.6
LEAD	SW6010	mg/kg	20.3	< 3.2	8.2	10	9.3	14.1	8.6
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	--	7.05	7.64	6.42	6.08	7.2	--
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--

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Location ID			**T1A**	**T1A**	**T2A**	**T2A**	**T2A**	**T2A**	**T3A**	**T3A**
Sample Name			**S06288904**	**ST-1093089**	**S03028918**	**S02728918**	**ORG-T2A-02**	**ORG-T2A-05-10**	**S03308910**	**S08108905**
Sample Date			**06/28/89**	**09/30/89**	**03/02/89**	**07/27/89**	**10/18/89**	**01/23/90**	**03/30/89**	**08/10/89**
Sample Time			**13:28**	**14:30**	**14:56**	**14:40**	**14:37**	**13:30**	**14:45**	**13:16**
Indicator Compounds	Analytical Method	Unit								
ALUMINUM	SW6010 / SW9-4.2	mg/kg	60.8	82.1	9.28	28.4	< 9.3	18.9	26	20.8
AMMONIA NITROGEN	305.3	mg/kg	0.80	1.07	< 0.58	1.51	0.84	1.92	0.84	2.11
ARSENIC	SW9045	mg/kg	< 2.0	5.8	4.2	10.1	26.9	--	32	< 3.6
CHROMIUM	SW6010	mg/kg	30.4	22.9	21	23	24.5	30.6	21	20.3
LEAD	SW6010	mg/kg	< 3.4	13.2	10	10.4	9.8	21.9	5.8	8.0
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--	--
pH	150.1	pH units	6.47	--	6.51	5.53	7.66	7.23	5.87	6.98
Extended Metals Analysis										
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--	--

Location ID			T3A	T3A	T3A	T4A	T4A
Sample Name			ST-3093089	ORG-T3A-03-10	ORG-T3A-06-10	S06288903	ST-4093089
Sample Date			09/30/89	11/14/89	02/28/90	06/28/89	09/30/89
Sample Time			14:10	13:25	11:20	13:22	14:35
Indicator Compounds	Analytical Method	Unit					
ALUMINUM	SW6010 / SW9-4.2	mg/kg	33.3	14.4	< 9.4	17.9	21.1
AMMONIA NITROGE	305.3	mg/kg	2.05	1.42	--	0.29	1.18
ARSENIC	SW9045	mg/kg	5.3	--	--	< 1.8	5.2
CHROMIUM	SW6010	mg/kg	23.2	23.5	29.4	20.7	20.2
LEAD	SW6010	mg/kg	9.2	12.1	5.1	< 3.2	9.9
FLUORIDE	340.2	mg/kg	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--
pH	150.1	pH units	--	7.41	--	6.39	--
Extended Metals Analysis							
ANTIMONY	SW6010	mg/kg	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--

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Location ID			**U1A**	**U1A**	**U1A**	**U1A**	**U1B**	**U2A**
Sample Name			**S03308911**	**S08108904**	**ORG-U1A-03-10**	**ORG-U1A-06-10**	**ORG-UIB-03-10**	**S06278904**
Sample Date			**03/30/89**	**08/10/89**	**11/14/89**	**02/28/90**	**11/14/89**	**06/27/89**
Sample Time			**14:50**	**13:03**	**11:45**	**11:40**	**11:40**	**14:45**
Indicator Compounds	Analytical Method	Unit						
ALUMINUM	SW6010 / 350.3	mg/kg	68	21.8	69.5	< 9.3	44.9	22.1
AMMONIA NITROGEN	SW9-4.2	mg/kg	21.3	0.836	0.69	--	1.5	1.01
ARSENIC	SW9045	mg/kg	56	< 3.3	--	--	--	< 2.0
CHROMIUM	SW6010	mg/kg	41	28.4	33.0	57.3	51.9	31.1
LEAD	SW6010	mg/kg	5.7	8.0	9.8	10.2	8.0	< 3.4
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--
pH	150.1	pH units	5.21	6.18	6.56	--	6.35	4.63
Extended Metals Analysis								
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--

Location ID			U2A	U3A	U3A	U3A	U3A	U4A	U4A
Sample Name			SU-2093089	S03028920	S02728919	ORG-U3A-02	ORG-U3A-05-10	S03028919	S07278920
Sample Date			09/30/89	03/02/89	07/27/89	10/18/89	01/23/90	03/02/89	07/27/89
Sample Time			14:55	14:48	14:42	14:07	11:40	14:52	14:47
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / 350.3	mg/kg	164	9.28	13000E	< 9.4	< 9.3	44.9	< 9.0
AMMONIA NITROGEN	SW9-4.2	mg/kg	1.19	0.65	1.14	0.67	3.23	1.20	3.89
ARSENIC	SW9045	mg/kg	5.3	13	2.2B	18.8	--	3.9	< 3.6
CHROMIUM	SW6010	mg/kg	26.5	32	20.4	14.1	15.3	17	13.8
LEAD	SW6010	mg/kg	7.4	6.8	13.0	8.4	8.1	6.6	11.8
FLUORIDE	340.2	mg/kg	--	--	< 0.61	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	< 47.7	--	--	--	--
pH	150.1	pH units	--	6.70	7.06	7.33	7.14	6.62	6.88
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	< 6.8	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	70.7	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	1.1 B	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	< 0.97	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	1320 E	--	--	--	--
COBALT	SW6010	mg/kg	--	--	3.7 B	--	--	--	--
COPPER	SW6010	mg/kg	--	--	8.1	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	< 0.65	--	--	--	--
IRON	SW6010	mg/kg	--	--	22800 E	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	446 BE	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	137 E	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	< 0.12	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	< 3.1	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	735 B	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	< 0.72	--	--	--	--
SILVER	SW6010	mg/kg	--	--	1.2 B	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	44.3 B	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	< 0.24	--	--	--	--
TIN	SW6010	mg/kg	--	--	< 14.5	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	29.2	--	--	--	--
ZINC	SW6010	mg/kg	--	--	18.6	--	--	--	--

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Location ID			U4A	U4A	V2	V4A	V4A	W2A	W2A
Sample Name			**ORG-U4A-02**	**ORG-U4A-05-10**	**SV-2093089**	**S06288902**	**SV-4093089**	**S03028924**	**S07278921**
Sample Date			**10/18/89**	**01/23/90**	**09/30/89**	**06/28/89**	**09/30/89**	**03/02/89**	**07/27/89**
Sample Time			**12:00**	**11:45**	**15:10**	**13:09**	**15:10**	**14:28**	**14:55**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / 350.3	mg/kg	< 9.8	14.1	--	19.0	19.8	11.7	49.5
AMMONIA NITROGEN	SW9-4.2	mg/kg	0.62	5.07	0.8	0.93	1.04	0.61	1.71
ARSENIC	SW9045	mg/kg	14.1	--	--	< 1.9	5.7	6.4	5.6
CHROMIUM	SW6010	mg/kg	13.2	16.4	--	27.4	18.9	18	7.3
LEAD	SW6010	mg/kg	8.8	10.9	--	< 3.3	13.5	7.7	3.6
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	7.37	6.89	--	6.40	--	7.01	7.00
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--

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Location ID			**W2A**	**W2A**	**W2B**	**W3A**	**W3A**	**X4A**	**X4A**
Sample Name			**ORG-W2A-02**	**ORG-W2A-05-10**	**ORG-W2B-02**	**S06288901**	**SW-3093089**	**S03308912**	**S08108903**
Sample Date			**10/18/89**	**01/23/90**	**10/18/89**	**06/28/89**	**09/30/89**	**03/30/89**	**08/10/89**
Sample Time			**12:00**	**11:25**	**12:00**	**13:01**	**15:20**	**15:01**	**12:56**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / 350.3	mg/kg	< 9.1	< 9.1	< 9.2	< 8.0	24.6	30	267
AMMONIA NITROGEN	SW9-4.2	mg/kg	0.84	3.32	1.09	0.92	1.22	3.96	1.30
ARSENIC	SW9045	mg/kg	15.7	--	16.4	< 1.7	5.6	25	< 3.3
CHROMIUM	SW6010	mg/kg	17.1	18.9	16.1	29.1	47.3	21	15.5
LEAD	SW6010	mg/kg	9.3	14.4	8.3	< 3.0	12.1	9.8	10.2
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	7.43	7.2	7.52	6.86	--	7.17	4.21
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--

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Location ID			**X4A**	**X4A**	**X4B**	**Y1A**	**Y1A**	**Y1A**	**Y1A**
Sample Name			**ORG-X4A-03-10**	**ORG-X4A-06-10**	**ORG-X4B-06-10**	**S03028923**	**S07278922**	**ORG-Y1A-02**	**ORG-Y1A-05-10**
Sample Date			**11/14/89**	**02/28/90**	**02/28/90**	**03/02/89**	**07/27/89**	**10/18/89**	**01/23/90**
Sample Time			**11:20**	**13:35**	**13:45**	**14:31**	**15:00**	**11:35**	**11:05**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / 350.3	mg/kg	245	319	436	39	262	< 9.6	11.5
AMMONIA NITROGEN	SW9-4.2	mg/kg	1.12	--	--	0.63	1.56	< 0.58	2.61
ARSENIC	SW9045	mg/kg	--	--	--	18	21.1	23.1	--
CHROMIUM	SW6010	mg/kg	15.7	19.1	27.6	27	28.4	30.7	28.3
LEAD	SW6010	mg/kg	8.1	5.8	4.7	9.1	11.8	9.9	9.9
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	5.02	--	--	6.83	6.83	7.22	6.98
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--

1989 - 1990 Baseline Soil Sampling Results
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Location ID			**Y1B**	**Y2A**	**Y2A**	**Y3A**	**Y3A**	**Y3A**
Sample Name			**ORG-Y1B-05-10**	**S06278903**	**SY-2093089**	**S03308913**	**S08108902**	**ORG-Y3A-03-10**
Sample Date			**01/23/90**	**06/27/89**	**09/30/89**	**03/30/89**	**08/10/89**	**11/14/89**
Sample Time			**11:15**	**14:35**	**15:30**	**15:06**	**12:50**	**11:15**
Indicator Compounds	Analytical Method	Unit						
ALUMINUM	SW6010 / 350.3	mg/kg	< 9.0	< 8.4	26.9	23	< 8.3	32.6
AMMONIA NITROGEN	SW9-4.2	mg/kg	1.33	0.67	0.89	1.94	1.56	1.92
ARSENIC	SW9045	mg/kg	--	< 1.8	5.6	14	< 3.3	--
CHROMIUM	SW6010	mg/kg	28.4	18.9	27.9	14	22.2	16.2
LEAD	SW6010	mg/kg	12.2	< 3.1	11.3	12	8.7	13.7
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--
pH	150.1	pH units	7.09	6.80	--	6.59	6.71	7.45
Extended Metals Analysis								
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--

1989 - 1990 Baseline Soil Sampling Results
Aerojet Facility
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Location ID			**Y3A**	**Y4A**	**Y4A**	**Y4A**	**Y4A**	**Z1A**	**Z1A**
Sample Name			**ORG-Y3A-06-10**	**S03028922**	**S07278923**	**ORG-Y4A-02**	**ORG-Y4A-05-10**	**S06278901**	**SZ-1093089**
Sample Date			**02/28/90**	**03/02/89**	**07/27/89**	**10/18/89**	**01/23/90**	**06/27/89**	**09/30/89**
Sample Time			**13:55**	**14:36**	**15:03**	**11:30**	**10:58**	**14:12**	**15:45**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / 350.3	mg/kg	< 9.7	14	48.1	< 8.9	10.7	20.4	47.6
AMMONIA NITROGEN	SW9-4.2	mg/kg	--	16.1	4.86	0.75	1.11	0.42	0.85
ARSENIC	SW9045	mg/kg	--	20	19.1	16.5	--	2.6	5.2
CHROMIUM	SW6010	mg/kg	22.0	26	12.5	16.6	15.1	27.7	24.7
LEAD	SW6010	mg/kg	10.4	9.4	9.5	9.4	6.7	< 3.2	11.2
FLUORIDE	340.2	mg/kg	--	--	--	--	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	--	--
pH	150.1	pH units	--	6.47	5.15	7.61	6.01	6.26	--
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	--	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	--	--
COBALT	SW6010	mg/kg	--	--	--	--	--	--	--
COPPER	SW6010	mg/kg	--	--	--	--	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	--	--
IRON	SW6010	mg/kg	--	--	--	--	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	--	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	--	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	--	--
SILVER	SW6010	mg/kg	--	--	--	--	--	--	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	--	--
TIN	SW6010	mg/kg	--	--	--	--	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	--	--
ZINC	SW6010	mg/kg	--	--	--	--	--	--	--

1989 - 1990 Baseline Soil Sampling Results
Aerojet Facility
Orange County, Virginia

Location ID			**Z2A**	**Z2A**	**Z2A**	**Z2A**	**Z3A**	**Z3A**	**Z3A**
Sample Name			**S03308914**	**S08108901**	**ORG-Z2A-03-10**	**ORG-Z2A-06-10**	**S03028921**	**S02728924**	**ORG-Z3A-02**
Sample Date			**03/30/89**	**08/10/89**	**11/14/89**	**02/28/90**	**03/02/89**	**07/27/89**	**10/18/89**
Sample Time			**15:10**	**12:43**	**11:05**	**14:12**	**14:39**	**15:05**	**11:22**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / 350.3	mg/kg	28	8.5	< 9.1	< 9.5	39	10100 E	< 9.4
AMMONIA NITROGEN	SW9-4.2	mg/kg	1.82	1.01	0.78	--	< 0.58	0.66	< 0.58
ARSENIC	SW9045	mg/kg	19	3.4	--	--	12	1.9 B	33.1
CHROMIUM	SW6010	mg/kg	20	18.7	23.6	28.2	18	16.9	23.7
LEAD	SW6010	mg/kg	8.6	7.0	11.7	11.2	10	3.5 S	8.5
FLUORIDE	340.2	mg/kg	--	--	--	--	--	< 0.57	--
SULFIDE	SULFIDE	mg/kg	--	--	--	--	--	< 45.6	--
pH	150.1	pH units	6.6	5.65	6.6	--	6.30	5.67	6.61
Extended Metals Analysis									
ANTIMONY	SW6010	mg/kg	--	--	--	--	--	< 6.5	--
BARIUM	SW6010	mg/kg	--	--	--	--	--	53.2	--
BERYLLIUM	SW6010	mg/kg	--	--	--	--	--	1.0 B	--
CADMIUM	SW6010	mg/kg	--	--	--	--	--	< 0.94	--
CALCIUM	SW6010	mg/kg	--	--	--	--	--	3820 E	--
COBALT	SW6010	mg/kg	--	--	--	--	--	1.9 B	--
COPPER	SW6010	mg/kg	--	--	--	--	--	3.8 B	--
CYANIDE	SW6010	mg/kg	--	--	--	--	--	< 0.57	--
IRON	SW6010	mg/kg	--	--	--	--	--	17000 E	--
MAGNESIUM	SW6010	mg/kg	--	--	--	--	--	406 BE	--
MANGANESE	SW6010	mg/kg	--	--	--	--	--	66.9 E	--
MERCURY	SW6010	mg/kg	--	--	--	--	--	< 0.11	--
NICKEL	SW6010	mg/kg	--	--	--	--	--	7.1 B	--
POTASSIUM	SW6010	mg/kg	--	--	--	--	--	284 B	--
SELENIUM	SW6010	mg/kg	--	--	--	--	--	< 0.70	--
SILVER	SW6010	mg/kg	--	--	--	--	--	< 0.70	--
SODIUM	SW6010	mg/kg	--	--	--	--	--	16.0 B	--
THALLIUM	SW6010	mg/kg	--	--	--	--	--	< 0.23	--
TIN	SW6010	mg/kg	--	--	--	--	--	< 14.0	--
VANADIUM	SW6010	mg/kg	--	--	--	--	--	24.3	--
ZINC	SW6010	mg/kg	--	--	--	--	--	11.3	--

1989 - 1990 Baseline Soil Sampling Results
Aerojet Facility
Orange County, Virginia

Location ID			**Z3A**	**Z4A**	**Z4A**
Sample Name			**ORG-Z3A-05-10**	**S06278902**	**SZ-4093089**
Sample Date			**01/23/90**	**06/27/89**	**09/30/89**
Sample Time			**10:50**	**14:20**	**16:00**
Indicator Compounds	Analytical Method	Unit			
ALUMINUM	SW6010 / 350.3	mg/kg	< 9.5	8.4	29.5
AMMONIA NITROGEN	SW9-4.2	mg/kg	1.76	0.42	0.84
ARSENIC	SW9045	mg/kg	--	< 1.8	5.4
CHROMIUM	SW6010	mg/kg	28.7	25.3	23.3
LEAD	SW6010	mg/kg	12.2	< 3.1	10.3
FLUORIDE	340.2	mg/kg	--	--	--
SULFIDE	SULFIDE	mg/kg	--	--	--
pH	150.1	pH units	6.64	6.66	--
Extended Metals Analysis					
ANTIMONY	SW6010	mg/kg	--	--	--
BARIUM	SW6010	mg/kg	--	--	--
BERYLLIUM	SW6010	mg/kg	--	--	--
CADMIUM	SW6010	mg/kg	--	--	--
CALCIUM	SW6010	mg/kg	--	--	--
COBALT	SW6010	mg/kg	--	--	--
COPPER	SW6010	mg/kg	--	--	--
CYANIDE	SW6010	mg/kg	--	--	--
IRON	SW6010	mg/kg	--	--	--
MAGNESIUM	SW6010	mg/kg	--	--	--
MANGANESE	SW6010	mg/kg	--	--	--
MERCURY	SW6010	mg/kg	--	--	--
NICKEL	SW6010	mg/kg	--	--	--
POTASSIUM	SW6010	mg/kg	--	--	--
SELENIUM	SW6010	mg/kg	--	--	--
SILVER	SW6010	mg/kg	--	--	--
SODIUM	SW6010	mg/kg	--	--	--
THALLIUM	SW6010	mg/kg	--	--	--
TIN	SW6010	mg/kg	--	--	--
VANADIUM	SW6010	mg/kg	--	--	--
ZINC	SW6010	mg/kg	--	--	--

ENVIRONMENTAL ALLIANCE

ED_001691B_00019876

Notes:

Note on Data Gaps: Data included are based on available documentation. Additional sampling events were conducted, however not all events have documented data available.

Data unconfirmed by laboratory reports are shaded.

< = Indicates analyte not found at or above specified laboratory detection limit

-- = Not analyzed/No additional data available

Note on Analytical Methods: Analytical Methods provided are based on available information, throughout the Baseline study multiple methods were used for a given analyte; not all results were accompanied by method information.

Qualifiers: No information on qualifier definition was provided; the following definitions are suggested based on industry standards (see http://www.caslab.com/EPA-Data-Qualifiers/ for more information):

J = Estimated

E = Estimated, exceeded calibration limits

B = Analyte present in blank

N = Spiked sample recovery not within control limits (inorganics)

ATTACHMENT F

BASELINE GROUNDWATER MONITORING DATA 1989 - 1990

(Electronic Format Only – Refer to Attachment C)

ENVIRONMENTAL ALLIANCE

1989-1990 Baseline Groundwater Sampling Results
Aerojet Facility
Orange County, Virginia

Location ID			MW-1B	MW-1B	MW-1B	MW-1B	MW-1B	MW-1B	MW-2A
Sample Name			MW-1B-01	ARC-MW1B-03	ARC-MW1B-04	ARC-MW1B-05	ARC-MW1B-06	ARC-MW1B-12	W02108901 - W02108908
Sample Date			10/04/89	11/27/89	12/20/89	01/19/90	02/26/90	08/30/90	02/10/89
Sample Time			17:08	11:30	15:30	16:10	12:15	8:30	---
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
AMMONIA NITROGEN	350.3	mg/l	--	< 0.05	< 0.03	< 0.061	< 0.30	< 0.15	< 0.05
ARSENIC	SW9045 / 206.3	ug/l	--	--	--	--	--	--	< 10
CHROMIUM	SW6010 / 200.7	ug/l	64.4	17	20.3	70.6	40.0	--	8.3
FLUORIDE	340.2	mg/l	--	--	--	--	--	--	--
LEAD	SW6010/239.2	ug/l	61.1	34	< 41.0	90.3	69.5	--	< 32
SULFIDE	--	mg/l	< 2.0	--	--	--	--	--	--
TOTAL SUSPENDED SOLIDS	160.2	mg/l	--	--	223	1130	926	10300	525
ANTIMONY	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
BARIUM	SW6010 / 200.7	ug/l	--	--	--	194	--	--	--
BERYLLIUM	SW6010 / 200.7	ug/l	--	--	--	3.0	--	--	--
CADMIUM	SW6010 / 200.7	ug/l	--	--	--	6.7	--	--	--
CALCIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
COBALT	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
COPPER	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
CYANIDE	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
IRON	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
MAGNESIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
MANGANESE	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
MERCURY	SW7470 / 245.1	ug/l	--	--	--	< 0.20	--	--	--
NICKEL	SW6010 / 200.7	ug/l	--	--	--	40.1	--	--	--
POTASSIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
SELENIUM	SW6010 / 200.7	ug/l	--	--	--	80.0	--	--	--
SILVER	SW6010 / 200.7	ug/l	--	--	--	3.0	--	--	--
SODIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
THALLIUM	SW6010 / 200.7	ug/l	--	--	--	132	--	--	--
TIN	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
VANADIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
ZINC	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--

1989-1990 Baseline Groundwater Sampling Results
Aerojet Facility
Orange County, Virginia

Location ID			**MW-2A**	**MW-2A**	**MW-2A**	**MW-2A**	**MW-2A**	**MW-2A**	**MW-2A**
Sample Name			**W04068901 - W04068903**	**W04288904 - W04288906**	**W07078901**	**W08038902**	**ARC-MW2A-01**	**ARC-MW2A-03**	**ARC-MW2A-06**
Sample Date			**04/06/89**	**04/28/89**	**07/07/89**	**08/03/89**	**10/02/89**	**11/22/89**	**02/26/90**
Sample Time			**13:32**	**13:32**	**14:15**	**15:10**	**16:00**	**11:20**	**11:50**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / 200.7	ug/l	--	--	--	--	10100	--	--
AMMONIA NITROGEN	350.3	mg/l	< 0.05	< 0.03	0.032	< 0.031	0.08	< 0.06	< 0.30
ARSENIC	SW9045 / 206.3	ug/l	< 34	< 16	< 16.0	< 30.0	< 3.0 N	--	--
CHROMIUM	SW6010 / 200.7	ug/l	< 6.0	< 3.0	< 3.0	< 7.0	13.2	< 10	9.5
FLUORIDE	340.2	mg/l	--	--	--	--	< 0.2	--	--
LEAD	SW6010/239.2	ug/l	20	< 28	38.1	< 28.0	14.2	10	< 41.0
SULFIDE	--	mg/l	--	--	--	--	< 2.0	--	--
TOTAL SUSPENDED SOLIDS	160.2	mg/l	154	166	196	< 4	--	564	1200
ANTIMONY	SW6010 / 200.7	ug/l	--	--	--	--	< 28.0	--	--
BARIUM	SW6010 / 200.7	ug/l	--	--	--	--	159 B	--	--
BERYLLIUM	SW6010 / 200.7	ug/l	--	--	--	--	< 1.0	--	--
CADMIUM	SW6010 / 200.7	ug/l	--	--	--	--	< 5.0 N	--	--
CALCIUM	SW6010 / 200.7	ug/l	--	--	--	--	1290 B	--	--
COBALT	SW6010 / 200.7	ug/l	--	--	--	--	69.8	--	--
COPPER	SW6010 / 200.7	ug/l	--	--	--	--	37.8	--	--
CYANIDE	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
IRON	SW6010 / 200.7	ug/l	--	--	--	--	50200	--	--
MAGNESIUM	SW6010 / 200.7	ug/l	--	--	--	--	582 B	--	--
MANGANESE	SW6010 / 200.7	ug/l	--	--	--	--	1210	--	--
MERCURY	SW7470 / 245.1	ug/l	--	--	--	--	< 0.20	--	--
NICKEL	SW6010 / 200.7	ug/l	--	--	--	--	< 18.0	--	--
POTASSIUM	SW6010 / 200.7	ug/l	--	--	--	--	4610 B	--	--
SELENIUM	SW6010 / 200.7	ug/l	--	--	--	--	< 3.0 N	--	--
SILVER	SW6010 / 200.7	ug/l	--	--	--	--	< 3.0 N	--	--
SODIUM	SW6010 / 200.7	ug/l	--	--	--	--	4230 B	--	--
THALLIUM	SW6010 / 200.7	ug/l	--	--	--	--	< 1.0	--	--
TIN	SW6010 / 200.7	ug/l	--	--	--	--	< 55.0	--	--
VANADIUM	SW6010 / 200.7	ug/l	--	--	--	--	17.8 B	--	--
ZINC	SW6010 / 200.7	ug/l	--	--	--	--	46.3	--	--

1989-1990 Baseline Groundwater Sampling Results
Aerojet Facility
Orange County, Virginia

Location ID			MW-2B	MW-2B	MW-2B2	MW-2BD	MW-2C	MW-2C
Sample Name			ARC-MW2B-01	ARC-MW2B-04	ARC-MW2B2-04	ARC-MW2BD-01	ARC-MW2C-01	ARC-MW2C-05
Sample Date			10/02/89	12/14/89	12/14/89	10/02/89	10/03/89	01/19/90
Sample Time			17:10	15:35	15:45	17:55	14:30	14:50
Indicator Compounds	Analytical Method	Unit						
ALUMINUM	SW6010 / 200.7	ug/l	7150	--	--	10600	29500	--
AMMONIA NITROGEN	350.3	mg/l	< 0.05	< 0.03	< 0.03	< 0.05	--	< 0.062
ARSENIC	SW9045 / 206.3	ug/l	< 3.0 N	--	--	< 3.0 N	4.4 BN	--
CHROMIUM	SW6010 / 200.7	ug/l	9.6 B	< 9	< 9	11.6	11.7	71.7
FLUORIDE	340.2	mg/l	< 0.2	--	--	< 0.2	--	--
LEAD	SW6010/239.2	ug/l	9.2 S	< 23	< 23	11.1 S	40.7	178
SULFIDE	--	mg/l	< 2.0	--	--	< 2.0	<2.0	--
TOTAL SUSPENDED SOLIDS	160.2	mg/l	--	222	188	--	--	8120
ANTIMONY	SW6010 / 200.7	ug/l	< 28.0	--	--	< 28.0	< 28.0	--
BARIUM	SW6010 / 200.7	ug/l	112 B	--	--	139 B	343	913
BERYLLIUM	SW6010 / 200.7	ug/l	< 1.0	--	--	1.2 B	3.4 B	17.4
CADMIUM	SW6010 / 200.7	ug/l	< 5.0 N	--	--	< 5.0 N	< 5.0 N	12.9
CALCIUM	SW6010 / 200.7	ug/l	1000 B	--	--	977 B	19000	--
COBALT	SW6010 / 200.7	ug/l	13.5 B	--	--	17.2 B	21.0 B	--
COPPER	SW6010 / 200.7	ug/l	20.8 B	--	--	26.4	18.2 B	--
CYANIDE	SW6010 / 200.7	ug/l	--	--	--	--	--	--
IRON	SW6010 / 200.7	ug/l	29900	--	--	38800	27800	--
MAGNESIUM	SW6010 / 200.7	ug/l	491 B	--	--	562 B	10000	--
MANGANESE	SW6010 / 200.7	ug/l	561	--	--	623	2320	--
MERCURY	SW7470 / 245.1	ug/l	< 0.20	--	--	< 0.20	< 0.20	< 0.2
NICKEL	SW6010 / 200.7	ug/l	< 18.0	--	--	< 18.0	23.1 B	116
POTASSIUM	SW6010 / 200.7	ug/l	3280 B	--	--	4730 B	3210 B	--
SELENIUM	SW6010 / 200.7	ug/l	< 3.0 WN	--	--	< 3.0 N	< 3.0 N	<80.0
SILVER	SW6010 / 200.7	ug/l	< 3.0 N	--	--	< 3.0 N	< 3.0 N	10.7
SODIUM	SW6010 / 200.7	ug/l	3100 B	--	--	3010 B	31300	--
THALLIUM	SW6010 / 200.7	ug/l	< 1.0	--	--	< 1.0	< 1.0	237
TIN	SW6010 / 200.7	ug/l	< 55.0	--	--	< 55.0	< 55.0	--
VANADIUM	SW6010 / 200.7	ug/l	18.1 B	--	--	19.5 B	14.8 B	--
ZINC	SW6010 / 200.7	ug/l	49.7	--	--	52.3	94.1	--

Location ID			MW-2C2	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D2
Sample Name			ARC-MW2C2-20	ARC-MW2D-01	ARC-MW2D2-03	ARC-MW2D-03	ARC-MW2D-06	ARC-MW2D2-06
Sample Date			01/19/90	10/03/89	11/22/89	11/22/89	02/24/90	02/26/90
Sample Time			15:00	12:45	10:40	10:35	13:20	13:20
Indicator Compounds	Analytical Method	Unit						
ALUMINUM	SW6010 / 200.7	ug/l	--	3690	--	--	--	--
AMMONIA NITROGEN	350.3	mg/l	< 0.061	--	< 0.06	< 0.06	< 0.30	< 0.30
ARSENIC	SW9045 / 206.3	ug/l	--	< 3.0 N	--	--	--	--
CHROMIUM	SW6010 / 200.7	ug/l	34.4	< 9.0	--	15	11.5	12.3
FLUORIDE	340.2	mg/l	--	--	--	--	--	--
LEAD	SW6010/239.2	ug/l	107	3.8 B	--	10	< 41.0	< 41.0
SULFIDE	--	mg/l	--	< 2.0	--	--	--	--
TOTAL SUSPENDED SOLIDS	160.2	mg/l	7480	--	551	536	440	432
ANTIMONY	SW6010 / 200.7	ug/l	--	< 28.0	--	--	--	--
BARIUM	SW6010 / 200.7	ug/l	665	57.1 B	--	--	--	--
BERYLLIUM	SW6010 / 200.7	ug/l	5.2	< 1.0	--	--	--	--
CADMIUM	SW6010 / 200.7	ug/l	<2.0	< 5.0 N	--	--	--	--
CALCIUM	SW6010 / 200.7	ug/l	--	1570 B	--	--	--	--
COBALT	SW6010 / 200.7	ug/l	--	9.8 B	--	--	--	--
COPPER	SW6010 / 200.7	ug/l	--	< 9.0	--	--	--	--
CYANIDE	SW6010 / 200.7	ug/l	--	--	--	--	--	--
IRON	SW6010 / 200.7	ug/l	--	10200	--	--	--	--
MAGNESIUM	SW6010 / 200.7	ug/l	--	1440 B	--	--	--	--
MANGANESE	SW6010 / 200.7	ug/l	--	481	--	--	--	--
MERCURY	SW7470 / 245.1	ug/l	< 0.20	< 0.20	--	--	--	--
NICKEL	SW6010 / 200.7	ug/l	55.9	< 18.0	--	--	--	--
POTASSIUM	SW6010 / 200.7	ug/l	--	< 2510	--	--	--	--
SELENIUM	SW6010 / 200.7	ug/l	<80.0	< 3.0 N	--	--	--	--
SILVER	SW6010 / 200.7	ug/l	<3.0	< 3.0 N	--	--	--	--
SODIUM	SW6010 / 200.7	ug/l	--	3080 B	--	--	--	--
THALLIUM	SW6010 / 200.7	ug/l	162	< 1.0	--	--	--	--
TIN	SW6010 / 200.7	ug/l	--	< 55.0	--	--	--	--
VANADIUM	SW6010 / 200.7	ug/l	--	7.4 B	--	--	--	--
ZINC	SW6010 / 200.7	ug/l	--	44.3	--	--	--	--

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Location ID			MW-2E	MW-2E	MW-3A	MW-3B	MW-3B	MW-3C
Sample Name			ARC-MW2E-01	ARC-MW2E-04	ARC-MW3A-01	W02068901 - W02068904	ARC-MW3B-01	ARC-MW3C-01
Sample Date			10/03/89	12/14/89	10/03/89	02/06/89	10/03/89	10/03/89
Sample Time			15:30	16:05	16:00	--	17:35	19:45
Indicator Compounds	Analytical Method	Unit						
ALUMINUM	SW6010 / 200.7	ug/l	11900	--	11900	--	74800	--
AMMONIA NITROGEN	350.3	mg/l	--	< 0.03	--	< 0.05	--	--
ARSENIC	SW9045 / 206.3	ug/l	< 3.0 WN	--	< 3.0 N	< 10	< 3.0 WN	--
CHROMIUM	SW6010 / 200.7	ug/l	10.7	18.7	16.1	28	93.8	--
FLUORIDE	340.2	mg/l	--	--	--	--	--	--
LEAD	SW6010/239.2	ug/l	19.6	84.9	39.1 S	69	79.8 S	--
SULFIDE	--	mg/l	< 2.0	--	< 2.0	--	< 2.0	< 2.0
TOTAL SUSPENDED SOLIDS	160.2	mg/l	--	4380	--	1250	--	--
ANTIMONY	SW6010 / 200.7	ug/l	< 28.0	--	< 28.0	--	119	--
BARIUM	SW6010 / 200.7	ug/l	165 B	--	57.3 B	--	354	--
BERYLLIUM	SW6010 / 200.7	ug/l	< 1.0	--	< 1.0	--	2.6 B	--
CADMIUM	SW6010 / 200.7	ug/l	< 5.0 N	--	< 5.0 N	--	< 5.0 N	--
CALCIUM	SW6010 / 200.7	ug/l	4760 B	--	800 B	--	3180 B	--
COBALT	SW6010 / 200.7	ug/l	14.8 B	--	38.5 B	--	113	--
COPPER	SW6010 / 200.7	ug/l	30	--	42.5	--	144	--
CYANIDE	SW6010 / 200.7	ug/l	--	--	--	--	--	--
IRON	SW6010 / 200.7	ug/l	25000	--	42100	--	193000	--
MAGNESIUM	SW6010 / 200.7	ug/l	3400 B	--	2380 B	--	21600	--
MANGANESE	SW6010 / 200.7	ug/l	792	--	1580	--	5380	--
MERCURY	SW7470 / 245.1	ug/l	< 0.20	--	< 0.20	--	< 0.20	--
NICKEL	SW6010 / 200.7	ug/l	25.5 B	--	25.7 B	--	159	--
POTASSIUM	SW6010 / 200.7	ug/l	4020 B	--	< 2510	--	3470 B	--
SELENIUM	SW6010 / 200.7	ug/l	< 3.0 N	--	< 3.0 N	--	< 3.0 WN	--
SILVER	SW6010 / 200.7	ug/l	5.3 BN	--	< 3.0 N	--	< 3.0 N	--
SODIUM	SW6010 / 200.7	ug/l	7490	--	1650 B	--	2460 B	--
THALLIUM	SW6010 / 200.7	ug/l	< 1.0	--	< 1.0	--	< 1.0	--
TIN	SW6010 / 200.7	ug/l	< 55.0	--	< 55.0	--	< 55.0	--
VANADIUM	SW6010 / 200.7	ug/l	12.0 B	--	19.8 B	--	82.1	--
ZINC	SW6010 / 200.7	ug/l	108	--	94.2	--	652	--

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Location ID			**MW-4A**	**MW-4A**	**MW-4A**	**MW-4A**	**MW-4A**	**MW-4A**	**MW-4A**
Sample Name			**W02078901 - W02078908**	**W04078901 - W04078903**	**W04288901 - W04288903**	**W07118901**	**W08038901**	**W08178901**	**ARC-MW4A-04**
Sample Date			**02/07/89**	**04/07/89**	**04/28/89**	**07/11/89**	**08/03/89**	**08/17/89**	**12/20/89**
Sample Time			**---**	**12:43**	**14:18**	**14:30**	**13:28**	**13:53**	**11:40**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
AMMONIA NITROGEN	350.3	mg/l	< 0.05	< 0.05	0.05	0.062	0.038	< 0.05	0.034
ARSENIC	SW9045 / 206.3	ug/l	< 10	< 34	< 16	< 30.0	< 30.0	< 30.0	--
CHROMIUM	SW6010 / 200.7	ug/l	4.4	< 6.0	< 3	< 7.0	< 7.0	< 7.0	8.8
FLUORIDE	340.2	mg/l	--	--	--	--	--	--	--
LEAD	SW6010/239.2	ug/l	32	18	< 28	< 19	32.3	< 19.0	< 41.0
SULFIDE	--	mg/l	--	--	--	--	--	--	--
TOTAL SUSPENDED SOLIDS	160.2	mg/l	255	158	81	44	< 4	24	640
ANTIMONY	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
BARIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
BERYLLIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
CADMIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
CALCIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
COBALT	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
COPPER	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
CYANIDE	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
IRON	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
MAGNESIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
MANGANESE	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
MERCURY	SW7470 / 245.1	ug/l	--	--	--	--	--	--	--
NICKEL	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
POTASSIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
SELENIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
SILVER	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
SODIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
THALLIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
TIN	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
VANADIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--
ZINC	SW6010 / 200.7	ug/l	--	--	--	--	--	--	--

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Location ID			**MW-4A**	**MW-4B**	**MW-4B**	**MW-4B**	**MW-4C**	**MW-4C**
Sample Name			**ARC-MW4A-06**	**ARC-MW4B-01**	**ARC-MW4B-02**	**ARC-MW4B-05**	**ARC-MW4C-01**	**ARC-MW4C-03**
Sample Date			**02/24/90**	**10/04/89**	**10/27/89**	**01/18/90**	**10/04/89**	**11/22/89**
Sample Time			**11:20**	**10:30**	**12:10**	**16:00**	**11:35**	**16:45**
Indicator Compounds	Analytical Method	Unit						
ALUMINUM	SW6010 / 200.7	ug/l	--	11100	--	--	10800	--
AMMONIA NITROGEN	350.3	mg/l	< 0.30	--	--	< 0.3	--	< 0.06
ARSENIC	SW9045 / 206.3	ug/l	--	< 3.0 N	--	--	< 3.0 WN	--
CHROMIUM	SW6010 / 200.7	ug/l	< 9.0	14.7	20.5	< 9.0	18.2	--
FLUORIDE	340.2	mg/l	--	--	--	--	--	--
LEAD	SW6010/239.2	ug/l	< 41.0	22.1	32.9	< 23.0	8.4	--
SULFIDE	--	mg/l	--	< 2.0	--	--	< 2.0	--
TOTAL SUSPENDED SOLIDS	160.2	mg/l	253	--	--	387	--	117
ANTIMONY	SW6010 / 200.7	ug/l	--	< 28.0	--	--	< 28.0	--
BARIUM	SW6010 / 200.7	ug/l	--	84.0 B	--	47.3	58.5 B	--
BERYLLIUM	SW6010 / 200.7	ug/l	--	< 1.0	--	< 1.0	< 1.0	--
CADMIUM	SW6010 / 200.7	ug/l	--	< 5.0 N	--	< 2.0	< 5.0 N	--
CALCIUM	SW6010 / 200.7	ug/l	--	1070 B	--	--	5110	--
COBALT	SW6010 / 200.7	ug/l	--	15.2 B	--	--	16.1 B	--
COPPER	SW6010 / 200.7	ug/l	--	17.6 B	--	--	24.6 B	--
CYANIDE	SW6010 / 200.7	ug/l	--	< 0.01	--	--	< 0.01	--
IRON	SW6010 / 200.7	ug/l	--	29400	--	--	28000	--
MAGNESIUM	SW6010 / 200.7	ug/l	--	3550 B	--	--	5920	--
MANGANESE	SW6010 / 200.7	ug/l	--	758	--	--	1250	--
MERCURY	SW7470 / 245.1	ug/l	--	< 0.20	--	< 0.20	< 0.20	--
NICKEL	SW6010 / 200.7	ug/l	--	20.6 B	--	< 18.0	23.1 B	--
POTASSIUM	SW6010 / 200.7	ug/l	--	< 2510	--	--	< 2510	--
SELENIUM	SW6010 / 200.7	ug/l	--	< 3.0 N	--	< 80.0	< 3.0 N	--
SILVER	SW6010 / 200.7	ug/l	--	< 3.0 N	--	< 3.0	< 3.0 N	--
SODIUM	SW6010 / 200.7	ug/l	--	1750 B	--	--	3690 B	--
THALLIUM	SW6010 / 200.7	ug/l	--	< 1.0	--	< 118	< 1.0	--
TIN	SW6010 / 200.7	ug/l	--	< 55.0	--	--	< 55.0	--
VANADIUM	SW6010 / 200.7	ug/l	--	13.3 B	--	--	13.5 B	--
ZINC	SW6010 / 200.7	ug/l	--	109	--	--	149	--

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Location ID			**MW-4C**	**MW-5A**	**MW-5A**	**MW-5A**	**MW-5A**	**MW-5A**
Sample Name			**ARC-MW4C-06**	**ARC-MW5A-01**	**ARC-MW5A-03**	**ARC-MW5A-04**	**ARC-MW5A-05**	**ARC-MW-5A-06**
Sample Date			**02/24/90**	**10/04/89**	**11/20/89**	**12/20/89**	**01/18/90**	**02/23/90**
Sample Time			**13:00**	**12:30**	**15:10**	**11:30**	**15:00**	**15:15**
Indicator Compounds	Analytical Method	Unit						
ALUMINUM	SW6010 / 200.7	ug/l	--	10400	--	--	--	--
AMMONIA NITROGEN	350.3	mg/l	< 0.30	--	< 0.30	< 0.03	< 0.3	< 0.30
ARSENIC	SW9045 / 206.3	ug/l	--	< 3.0 WN	--	--	--	--
CHROMIUM	SW6010 / 200.7	ug/l	< 9.0	15.2	18.2	35.7	37.1	36.2
FLUORIDE	340.2	mg/l	--	--	--	--	--	--
LEAD	SW6010/239.2	ug/l	< 41.0	9.7	< 41.0	< 41.0	27.5	< 41.0
SULFIDE	--	mg/l	--	< 2.0	--	--	--	--
TOTAL SUSPENDED SOLIDS	160.2	mg/l	79	--	375	602	1420	1490
ANTIMONY	SW6010 / 200.7	ug/l	--	< 28.0	--	--	--	--
BARIUM	SW6010 / 200.7	ug/l	--	47.5 B	--	--	99.3	--
BERYLLIUM	SW6010 / 200.7	ug/l	--	< 1.0	--	--	< 1.0	--
CADMIUM	SW6010 / 200.7	ug/l	--	< 5.0 N	--	--	< 2.0	--
CALCIUM	SW6010 / 200.7	ug/l	--	1260 B	--	--	--	--
COBALT	SW6010 / 200.7	ug/l	--	14.3 B	--	--	--	--
COPPER	SW6010 / 200.7	ug/l	--	14.0 B	--	--	--	--
CYANIDE	SW6010 / 200.7	ug/l	--	< 0.01	--	--	--	--
IRON	SW6010 / 200.7	ug/l	--	23600	--	--	--	--
MAGNESIUM	SW6010 / 200.7	ug/l	--	4140 B	--	--	--	--
MANGANESE	SW6010 / 200.7	ug/l	--	1180	--	--	--	--
MERCURY	SW7470 / 245.1	ug/l	--	1.9	--	--	< 0.20	--
NICKEL	SW6010 / 200.7	ug/l	--	< 18.0	--	--	39.6	--
POTASSIUM	SW6010 / 200.7	ug/l	--	< 2510	--	--	--	--
SELENIUM	SW6010 / 200.7	ug/l	--	< 3.0 N	--	--	< 80.0	--
SILVER	SW6010 / 200.7	ug/l	--	< 3.0 N	--	--	< 3.0	--
SODIUM	SW6010 / 200.7	ug/l	--	1680 B	--	--	--	--
THALLIUM	SW6010 / 200.7	ug/l	--	< 1.0	--	--	< 118	--
TIN	SW6010 / 200.7	ug/l	--	< 55.0	--	--	--	--
VANADIUM	SW6010 / 200.7	ug/l	--	11.9 B	--	--	--	--
ZINC	SW6010 / 200.7	ug/l	--	69.6	--	--	--	--

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Location ID			**OW-1A**	**OW-1A**	**OW-1A**	**OW-1A**	**OW-1A**	**OW-1A**	**OW-1A**
Sample Name			**W02088901 - W02088908**	**W04258901 - W04258903**	**W06308901**	**W08028901**	**W08158901**	**ARC-MWOW1A-01**	**ARC-OW1A-02**
Sample Date			**02/08/89**	**04/25/89**	**06/30/89**	**08/02/89**	**08/15/89**	**10/04/89**	**10/18/89**
Sample Time			---	**16:01**	**12:50**	**15:58**	**15:24**	**15:10**	**13:12**
Indicator Compounds	Analytical Method	Unit							
ALUMINUM	SW6010 / 200.7	ug/l	--	--	--	--	--	41100	--
AMMONIA NITROGEN	350.3	mg/l	< 0.05	0.12	--	< 0.030	--	--	< 0.031
ARSENIC	SW9045 / 206.3	ug/l	< 10	< 16	21.2	< 30.0	< 30.0	< 3.0 N	--
CHROMIUM	SW6010 / 200.7	ug/l	< 4.0	16	7.5	7.4	21.7	44.6	< 9.0
FLUORIDE	340.2	mg/l	--	--	--	--	< 0.10	--	--
LEAD	SW6010/239.2	ug/l	< 32	< 28	< 28	< 28.0	< 19.0	37.3	< 28.0
SULFIDE	--	mg/l	--	--	--	--	< 2.0 **	< 2.0	--
TOTAL SUSPENDED SOLIDS	160.2	mg/l	616	1070	--	17	--	--	762
ANTIMONY	SW6010 / 200.7	ug/l	--	--	--	--	--	37.0 B	--
BARIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	342	--
BERYLLIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	3.3 B	--
CADMIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	< 5.0 N	--
CALCIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	5800	--
COBALT	SW6010 / 200.7	ug/l	--	--	--	--	--	57.3	--
COPPER	SW6010 / 200.7	ug/l	--	--	--	--	--	69.4	--
CYANIDE	SW6010 / 200.7	ug/l	--	--	--	--	< 10.0	< 0.01	--
IRON	SW6010 / 200.7	ug/l	--	--	--	--	--	113000	--
MAGNESIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	9990	--
MANGANESE	SW6010 / 200.7	ug/l	--	--	--	--	--	2720	--
MERCURY	SW7470 / 245.1	ug/l	--	--	--	--	--	< 0.20	--
NICKEL	SW6010 / 200.7	ug/l	--	--	--	--	--	58.8	--
POTASSIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	< 2510	--
SELENIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	< 3.0 N	--
SILVER	SW6010 / 200.7	ug/l	--	--	--	--	--	< 3.0 N	--
SODIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	5670	--
THALLIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	< 1.0	--
TIN	SW6010 / 200.7	ug/l	--	--	--	--	--	< 55.0	--
VANADIUM	SW6010 / 200.7	ug/l	--	--	--	--	--	45.2 B	--
ZINC	SW6010 / 200.7	ug/l	--	--	--	--	--	299	--

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Location ID			OW-1A	OW-1A	OW-1B	OW-1B	OW-1B	OW-1B
Sample Name			ARC-OW1A-04	ARC-OW-1A-06	ARC-MWOW1B-01	ARC-OW1B-02	ARC-OW1B-03	ARC-OW1B-05
Sample Date			12/13/89	02/23/90	10/04/89	10/18/89	11/20/89	01/18/90
Sample Time			15:37	14:50	14:40	15:10	13:45	12:05
Indicator Compounds	Analytical Method	Unit						
ALUMINUM	SW6010 / 200.7	ug/l	--	--	19600	--	--	--
AMMONIA NITROGEN	350.3	mg/l	< 0.03	< 0.30	--	< 0.032	< 0.30	< 0.3
ARSENIC	SW9045 / 206.3	ug/l	--	--	< 3.0 WN	--	--	--
CHROMIUM	SW6010 / 200.7	ug/l	< 9	16.9	36.6	9.5	51.5	23.0
FLUORIDE	340.2	mg/l	--	--	--	--	--	--
LEAD	SW6010/239.2	ug/l	< 23	< 41.0	41.2	< 28.0	< 41.0	< 23.0
SULFIDE	--	mg/l	--	< 2	< 2.0	--	--	--
TOTAL SUSPENDED SOLIDS	160.2	mg/l	766	1180	--	464	1880	1010
ANTIMONY	SW6010 / 200.7	ug/l	--	--	< 28.0	--	--	--
BARIUM	SW6010 / 200.7	ug/l	--	--	135 B	--	--	99.3
BERYLLIUM	SW6010 / 200.7	ug/l	--	--	< 1.0	--	--	< 1.0
CADMIUM	SW6010 / 200.7	ug/l	--	--	< 5.0 N	--	--	< 2.0
CALCIUM	SW6010 / 200.7	ug/l	--	--	1270 B	--	--	--
COBALT	SW6010 / 200.7	ug/l	--	--	63.6	--	--	--
COPPER	SW6010 / 200.7	ug/l	--	--	42.4	--	--	--
CYANIDE	SW6010 / 200.7	ug/l	--	--	< 0.01	--	--	--
IRON	SW6010 / 200.7	ug/l	--	--	76000	--	--	--
MAGNESIUM	SW6010 / 200.7	ug/l	--	--	3610 B	--	--	--
MANGANESE	SW6010 / 200.7	ug/l	--	--	1600	--	--	--
MERCURY	SW7470 / 245.1	ug/l	--	--	< 0.20	--	--	< 0.20
NICKEL	SW6010 / 200.7	ug/l	--	--	20.3 B	--	--	22.7
POTASSIUM	SW6010 / 200.7	ug/l	--	--	< 2510	--	--	--
SELENIUM	SW6010 / 200.7	ug/l	--	--	< 3.0 N	--	--	< 80.0
SILVER	SW6010 / 200.7	ug/l	--	--	< 3.0 N	--	--	< 3.0
SODIUM	SW6010 / 200.7	ug/l	--	--	1680 B	--	--	--
THALLIUM	SW6010 / 200.7	ug/l	--	--	< 1.0	--	--	< 118
TIN	SW6010 / 200.7	ug/l	--	--	< 55.0	--	--	--
VANADIUM	SW6010 / 200.7	ug/l	--	--	37.6 B	--	--	--
ZINC	SW6010 / 200.7	ug/l	--	--	95	--	--	--

1989-1990 Baseline Groundwater Sampling Results
Aerojet Facility
Orange County, Virginia

Location ID			**OW-1B2**
Sample Name			**ARC-OW1B2-02**
Sample Date			**10/18/89**
Sample Time			**15:20**
Indicator Compounds	Analytical Method	Unit	
ALUMINUM	SW6010 / 200.7	ug/l	--
AMMONIA NITROGEN	350.3	mg/l	< 0.031
ARSENIC	SW9045 / 206.3	ug/l	--
CHROMIUM	SW6010 / 200.7	ug/l	12.5
FLUORIDE	340.2	mg/l	--
LEAD	SW6010/239.2	ug/l	< 28.0
SULFIDE	--	mg/l	--
TOTAL SUSPENDED SOLIDS	160.2	mg/l	392
ANTIMONY	SW6010 / 200.7	ug/l	--
BARIUM	SW6010 / 200.7	ug/l	--
BERYLLIUM	SW6010 / 200.7	ug/l	--
CADMIUM	SW6010 / 200.7	ug/l	--
CALCIUM	SW6010 / 200.7	ug/l	--
COBALT	SW6010 / 200.7	ug/l	--
COPPER	SW6010 / 200.7	ug/l	--
CYANIDE	SW6010 / 200.7	ug/l	--
IRON	SW6010 / 200.7	ug/l	--
MAGNESIUM	SW6010 / 200.7	ug/l	--
MANGANESE	SW6010 / 200.7	ug/l	--
MERCURY	SW7470 / 245.1	ug/l	--
NICKEL	SW6010 / 200.7	ug/l	--
POTASSIUM	SW6010 / 200.7	ug/l	--
SELENIUM	SW6010 / 200.7	ug/l	--
SILVER	SW6010 / 200.7	ug/l	--
SODIUM	SW6010 / 200.7	ug/l	--
THALLIUM	SW6010 / 200.7	ug/l	--
TIN	SW6010 / 200.7	ug/l	--
VANADIUM	SW6010 / 200.7	ug/l	--
ZINC	SW6010 / 200.7	ug/l	--

Notes:

Note on Data Gaps: Data included are based on available documentation. Additional sampling events were conducted, however not all events have documented data available.

Data unconfirmed by laboratory reports are shaded.

Note on Analytical Methods: Analytical Methods provided are based on available information, throughout the Baseline study multiple methods were used for a given analyte; not all results were accompanied by method information.

< = Indicates analyte not found at or above specified laboratory detection limit

-- = Not analyzed/No additional data available

Qualifiers: No information on qualifier definition was provided; the following definitions are suggested based on industry standards (see http://www.caslab.com/EPA-Data-Qualifiers/ for more information):

J = Estimated

E = Estimated, exceeded calibration limits

B = Analyte present in blank

N = Spiked sample recovery not within control limits (inorganics)

** = Original sample broken; values based on analysis from aliquots of "cyanide" sample bottle.

ATTACHMENT G

VDEQ CLOSURE STATISTICAL ANALYSIS GUIDELINES

Data Analysis Guidelines for Soil- Hazardous Waste Closure Sites

Virginia Department of Environmental Quality
Office of Waste Programs

May, 2001

(DRAFT)

Data Analysis Guidelines for Soil- Hazardous Waste Closure Sites
May, 2001

The purpose of this document is to provide general guidelines and to address common questions for the hazardous waste staff pertaining to the statistical analysis of soil samples at hazardous waste facilities. This document should be used in conjunction with the approval of the hazardous waste closure plan or closure report. The statistical methods covered in this document include the most common statistical analyses used for soil samples.

This guidance document is applicable to situations where the samples have been collected such that the difference between background and compliance areas can be attributed to impact from the facility. Outside sources of variability (sources of variability other than impact from the facility) should be identified and incorporated into the design of the experiment. Most statistical tests mentioned in this document (except the tolerance interval) assume that contamination will be uniform throughout the compliance area. All statistical tests in this document assume that unimpacted soils taken from the background area and the compliance area are the same.

A closure statistical comparison will be employed to determine if adequate decontamination for any of the following activities has been achieved:

- decontamination of a hazardous waste management unit, including
- removal of contaminated soil underneath a hazardous waste management unit.

Background samples and compliance samples will be collected for the statistical comparison. Background samples refer to samples taken from either pre-rinse decontamination liquid or concrete/soil at approved locations, which are expected to be unimpacted by the facility's historical activities. Compliance samples are those collected from either post-rinse liquid or concrete/soil from the closure unit.

The statistical comparison will satisfy the following performance standards:

- The significance level will be no less than 5% throughout the statistical evaluation;

- Determination of the minimum number of samples, treatment of outliers, and treatment of non-detected values will follow the *Interim Guidance Document on the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities*, EPA, April 1989; and *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Draft*

Addendum to the Interim Guidance, EPA, June 1992.

- The sampling results satisfy the assumptions associated with the selected statistical method(s) including the minimum number of background/compliance samples and the distribution of data points.

- If a comparison of soils at different depths (or soil types) is required for the facility, the sampling design must ensure that adequate background and compliance samples are taken at each depth (or soil type).

The facility shall propose a statistical method(s) to be used for the evaluation of closure decontamination and shall demonstrate the applicability of the selected method(s) to VADEQ. If the statistical comparison indicates that there is no significant difference between the background and the compliance sampling results, the compliance sampling results are deemed to pass the background statistical comparison, and the decontamination is deemed to be adequate.

Below are some suggested statistical methods for use in closure demonstration:

Tolerance interval

The tolerance interval is designed to contain $(1-\beta)\%$ of the sample population with $(1-\alpha)\%$ confidence. A minimum of 19 background samples should be collected when using this test to ensure the test has adequate power to detect an impact from the facility. At least one data point from each sampling grid in the compliance area should be compared to the upper tolerance limit calculated for the background dataset. Parametric and non-parametric analyses can be performed using the tolerance interval. Assumptions of normality should be checked prior to performing a parametric analysis. If 50% or more of the background data are non-detects, the non-parametric tolerance limit should be used for analysis. The advantage of the tolerance limit is it can detect "hot spots" in the compliance area and will minimize the need for additional sampling after analysis. The disadvantage is the number of background samples required to calculate the tolerance limit with a minimal false positive rate and the number of compliance samples (one from each sampling grid) needed.

CABF T-test

The CABF T-test is a parametric test used to compare the mean of the background data to the mean of the compliance data. The assumptions of normality (or log-normality) and equal variances should be applied prior to performing the t-test. If the data are not normally (or log-normally) distributed or the assumption of equal variances is not met, a non-parametric test should be performed. If 50% or more of the either the background or compliance data are non-detects, a non-parametric test should be performed. A minimum of four background samples and four compliance samples are needed to perform this test. The advantage of the CABF T-test is the few number of samples needed to perform the test. The disadvantage is that the test assumes uniform contamination exists at the site. If there is evidence of "hot spots" at the site, the facility may be asked to take more samples and possibly use a tolerance interval for analysis. The sampling plan, established prior to the initial sampling, should include locations of additional random samples in case they are needed.

Wilcoxon Rank Sum Test

The Wilcoxon rank sum test is a non-parametric test used for comparison of the median of the background data to the median of the compliance data. The test assumes the distributions of the two datasets are the same. A minimum of five background samples and five compliance samples are needed to perform this test. The advantage of the Wilcoxon test is the few number of samples needed to perform the test. The disadvantage is that the test assumes uniform contamination exists at the site. If there is evidence of "hot spots" at the site, the facility may be asked to take more samples and possibly use a tolerance interval for analysis. The sampling plan, established prior to the initial sampling, should include locations of additional random samples in case they are needed.

Minimum samples needed to perform the above tests are detailed in Table 1 on page 5.

Questions or Comments?

Please Contact:
Hasan Keceli
Statistician
Office of Waste Programs
698-4246

Table 1

Suggested Minimum Samples*			
	Parametric	Non-Parametric	Non-Parametric Interval %Confidence
CABF T-test	4	NA	NA
Wilcoxon Rank Sum	NA	5	NA
Confidence Interval	4	NA	NA
Tolerance Interval	8	19	95%

* The above tests can be used with fewer samples, however it will increase the false positive rate.
NA Not Applicable.
Revised 5/11/2001

ATTACHMENT H

VDEQ RISK-BASED CLOSURE

ATTACHMENT H

Additional Information

Refer to IRIS, PPRTVs, and other EPA references or most recent update of EPA Regional Screening Level (RSL) Summary Table at the time of data analysis to obtain updated toxicity values and ensure to include the date of references for toxicity values in the Closure Report.

Use skin-to-soil adherence factor of 0.07 mg/cm^2 for adult and 0.2 mg/cm^2 for child receptor.

Use the following equations to convert inhalation toxicity values:

RfD (mg/kg-d) = [RfC (mg/m^3) * 20 (m^3/d)]/70 kg.

CSF (1/mg/kg-d) = [IUR $(\mu g/m^3)^{-1}$*70 kg *1000]/20 (m^3/d)

ENVIRONMENTAL ALLIANCE

RISK-BASED CLOSURE

1. Introduction

This document discusses the protocol for conducting a risk assessment to implement closure of hazardous waste management unit (HWMU) in accordance with Title 9 of the Virginia Administrative Code, Section 20-60-10 et seq. (Formerly the Virginia Hazardous Waste Management Regulations).

1. Risk-Based Evaluation In order to estimate the risk for chemicals of concern (COCs) a risk assessment will be conducted according to the Virginia DEQ document titled "Guidance for development of health based cleanup goals using decision tree/REAMS program (herein after "Virginia Risk Guidance") (November 1, 1994) prepared by Old Dominion University and the approved closure plan. The risk assessment report will contain the following sections:

- site evaluation,
- development of a site conceptual model,
- identification of contaminants of concern,
- identification of media and exposure pathways,
- toxicity assessment,
- estimation of contaminant concentration at the point of exposure, and
- summary of health risks.

The submission instructions contained in Appendix IX of the Virginia Risk Guidance will be reviewed prior to submitting the report to confirm that all necessary risk issues have been addressed. The risk goals/performance standards will be a hazard index of 1.0 for non-carcinogens and an individual carcinogenic risk of 1E-06 and cumulative carcinogenic risk of 1E-04.

Compliance with the closure standard will be verified by comparing the calculated individual and cumulative risk/hazard for all the contaminants of concern (COC) that failed background comparison to the risk-based performance standards.

The risk assessment will be conducted assuming a future residential/industrial use of the property. The methodology/equation for estimating the exposure concentration is presented in subsequent sections.

The initial step in the risk assessment will be to develop a site conceptual exposure model (SCEM) which depicts all potential exposure routes and media for the site and the receptors which may be exposed. The procedure for identification of contaminants of concern for health based is presented in Section 2.

Once the SCEM is completed, the exposure assumptions outlined in the Virginia Risk Guidance will be employed to estimate the health risks and develop a cleanup criteria. Information will also be taken as needed from U.S. EPA documents and databases (e.g., the Risk Assessment Guidance for Superfund (RAGS), and the Integrated Risk Information System (IRIS)). The chemical intake equations and exposure parameter assumptions used to calculate estimate risks (obtained from Virginia risk assessment guidance/REAMS) are shown in Tables 1 through 4. Additional details on the approach and assumptions used for each potential exposure pathway are provided below.

As a part of the Risk Exposure and Analysis Modeling System (REAMS) evaluation, fate and transport modeling is necessary to demonstrate that the residual soil concentrations of contaminants of concern would not result in contamination of other environmental media of concern including the groundwater underneath the closure unit. The SESOL module evaluates likelihood for the transport of contaminants to other media and estimates the transfer load. For this purpose, representative soil sample(s) will be collected around the unit (subjected to closure) for analysis of the physical properties listed on page 62 of the REAMS document. Specifically, site-specific soil data will include at a minimum bulk density and porosity. Weather data to be used in the REAMS model will be obtained from the State Climatology Office in Charlottesville.

2. Identification of Contaminants of Concern

Contaminants of concern includes those constituents detected during the closure soil sampling which may be related to past waste management practices and whose concentrations statistically exceeded background levels. Please note that if the concentration of inorganic contaminants detected in the soil did not exceed the background levels, no further risk-based evaluation will be required. Only those inorganic constituents of concern having concentrations that are statistically greater than background concentrations and all detected organic contaminants will be subject to REAMS evaluation to estimate the risks.

3. Exposure Assessment

The exposure assessment will identify transport mechanisms for the contaminants of concern that may potentially impact human receptors. The results of this assessment will be used to document the current and future exposure potential posed by the site.

With regard to soil, the following exposure assumptions will apply. Initially, a residential exposure will be assumed for the purpose of attempting to document unrestricted closure of the soil. If the risk for potential residential exposure does not exceed the performance standards, unrestricted closure of soil will be documented/accepted. If the site cannot be clean closed for residential use, then the option to pursue restricted closure (commercial/industrial) will be exercised. Closure to commercial/industrial scenario will require the facility to enact a deed restriction that eliminates the possibility of future residential use of the site. The requirements for establishing such a deed restriction are detailed in VDEQ's Guidelines for Developing Health-Based Cleanup Goals Using Risk Assessment at A Hazardous Waste Site

Facility for Restricted Industrial Use, dated June 1995.

Exposure routes will include ingestion, dermal absorption, and inhalation of vapors and dust particles.

With regard to groundwater, REAMS fate and transport modeling[1] will be required to assess residual soil contamination impacts to the groundwater. If the groundwater does not qualify for clean closure, the scope of future groundwater monitoring will be discussed with VDEQ. The groundwater exposure routes to be evaluated include ingestion, dermal absorption, and inhalation of volatiles emitted from the contaminated groundwater.

The exposure assumptions presented in the following sections are based on residential exposure. These constitute a reasonable maximum exposure scenario (RME), an exposure which is unlikely to occur but is reasonably possible. The exposure pathways for residential exposure include ingestion of soil, dermal contact with soil, inhalation of resuspended soil particulates, and inhalation of volatile organic compounds. Potential exposure to groundwater at the site will be evaluated

3.1.1 Ingestion of Soil

The equation for potential chemical intake by soil ingestion for residential scenario on site is included in Table 1. This scenario also assumes that weather or other conditions (e.g., frozen ground/ snow /other cover) do not affect exposure and that all soil ingested is from contaminated areas of the site. These assumptions are protective of human health and the environment.

3.1.2 Dermal Contact with Soil

---

[1] REAMS includes the unsaturated zone fate and transport model SESOIL. The purpose of running the model is two fold: a) determine whether the contaminants will reach the groundwater table in next 30 years. b) calculate the risk associated with the estimated concentration in the groundwater. For constituents with a promulgated MCL, the estimated concentration will be directly compared against the MCL. However, prior to running the SESOIL model the facility should obtain all the information identified on page 62, of the Virginia guidance document. The closure report must include evaluation of model results (concentrations reaching the groundwater) and a copy of SESOIL output file.

The equation for calculating the potential absorbed chemical dose by dermal contact with contaminated soil is provided in table 1. This scenario assumes that weather or other conditions (e.g., frozen ground/ snow or other cover) do not affect exposure, that contaminated soil remains on the skin long enough for the COCs to be absorbed and that all soil adhering to the skin is from contaminated areas of the site.

The skin surface areas (SA) used in the dermal pathway have been identified in REAMS guidance as 4,860 cm^2 for adults, which is the 50th percentile value for the arms, hands and lower legs (U.S. EPA, 1989b - See Attachment A).

A skin-soil adherence factor of 1.45 mg/cm^2 will be used in the dermal intake calculations. The U.S. EPA guidance for dermal exposure assessment (Dermal Exposure Assessment: Principles and Applications, EPA/600/8-91/011B) states that a range of values from 0.1 mg/cm^2 to 1.5 mg/cm^2 per event appear possible for dermal adherence factors (AF). In order to estimate the amount of a particular COC which may potentially be absorbed through the skin, chemical-specific dermal absorption factors (ABS_{derm}) are used.

3.1.3 Inhalation of Resuspended Soil

The equation for potential chemical intake by inhalation of resuspended contaminated soil is included in Table 1. An inhalation rate of 0.83 m^3/hr will be used as specified in the Virginia Risk Guidance. This scenario assumes that the concentration of COCs in indoor dust will be equal to that in outdoor soil and that weather or other conditions, (e.g., frozen ground/snow or other cover) do not affect resuspension or exposure.

However, an appropriate model or equations in table-1, will be used to estimate the potential amount of respirable particulate matter generated by wind erosion. The estimated generation rate for eroded particulate matter will then be used derive an ambient air particulate concentration. Documentation for these models will be presented to the Department.

3.1.4 Inhalation of Volatilized COCs in Soil

Since the COCs have appreciable vapor pressures, they are expected to volatilize from soil. Inhalation of COCs as volatilized vapors is considered for this risk assessment. The equations in Table-1 will be considered for estimating the intake for this condition.

4. Toxicity Assessment

The two principle indices of toxicity used in risk assessment are the reference dose (RfD) and the cancer slope factor (SF). An RfD is the intake or dose per unit of body weight (mg/kg-day) that is unlikely to result in toxic (non-carcinogenic) effects to human populations, including sensitive subgroups (e.g., the very young or elderly). The RfD allows for the existence of a threshold dose below which no adverse effects occur.

The SF is used to express the cancer risk attributable to a discrete unit of intake; that is, the cancer risk per milligram ingested per kilogram of bodyweight per day ($[mg/kg\text{-}day]^{-1}$). The SF is an estimate of the upper-bound probability of an individual developing cancer as a result of exposure to a particular carcinogen. Unlike the RfD, the SF assumes that there is no threshold dose below which the probability of developing cancer is zero. Note that SFs are only developed for those chemicals which have been shown to be carcinogens in man or in at least several animal species. A carcinogenic weight of evidence rating is used to describe the strength of the experimental evidence for carcinogenicity. The U.S. EPA has developed SFs for most chemicals with weight of evidence ratings of "A" (known human carcinogen) or "B" (probable human carcinogen).

RfDs and SFs are derived by the U.S. EPA for the most toxic chemicals generally associated with chemical releases to the environment for which adequate toxicological data are available. If both the carcinogenic and non-carcinogenic effects of a particular compound are significant, both values may be established. However, in most cases only one value is available.

4.1 Inhalation and oral RfDs and SFs -

SFs pertinent to the oral and inhalation exposure pathways will be obtained from U.S. EPA's IRIS database. The IRIS (Integrated Risk Information System) on-line database was established by the U.S. EPA to provide risk assessors with peer reviewed toxicological data on chemicals commonly encountered at environmental sites of contamination. If data is not available from IRIS, it will be obtained from the Health Effects Assessment Summary Tables (HEAST), a compilation of toxicity values produced by the USEPA on a quarterly basis. The hierarchy presented in Appendix III of Virginia Risk guidance will be followed for using these sources.

4.2 Dermal RfDs and SFs -

Chemical specific oral-route absorption values (ABS_{oral}) are used to adjust the oral RfD or SF, which is computed from an administered dose, for use in the dermal exposure pathway. This correction is necessary due to the differences in absorption between the skin and the gastrointestinal tract. By correcting the administered-dose oral RfD or SF for the fraction expected to be absorbed in the gut, a dermal absorption factor can be used to estimate the correct dose received through the skin.

5. Evaluation of Risks

Using the toxicity criteria and identified exposure pathways discussed above, and the procedures described in the VDEQ guidance document (REAMS, November 1994), the risks presented by the COC will be estimated. The estimated risks will consider the effects from multiple constituents and all routes of exposure. The risk goals will be a total cumulative hazard index of 1.0 for multiple noncarcinogens and a total cumulative carcinogenic risk of 1E-04 for multiple carcinogens. However, the risk from each individual carcinogen shall not exceed 1E-06 (i.e., one case of cancer per 1,000,000 population).

5.1 Estimation of exposure concentration

For the contaminants detected at the site, an exposure point concentration (EPC) for each exposure pathway will be calculated for each contaminant by estimating the 95th upper confidence limit (UCL) on the arithmetic mean of the concentrations. If the calculated 95th UCL is greater than the maximum detected concentration, then the maximum detected concentration will be used as the EPC. The risks for contaminants will be calculated as per the equations and assumptions described in Table 1 through Table 4. If for a contaminant both carcinogenic and noncarcinogenic risk-based cleanup goal exists, the lower of the two will be used as a pathway specific to estimate the risk.

5.2. Risk Estimation

Health risk assessments are based on the relationship between risk, dose and toxicity:

$$Risk = Dose * Toxicity$$

Since dose is the product of the contaminant concentration multiplied by exposure (the intake), equation (1) becomes:

$$Risk = Intake\ rate * Contaminant\ conc. * Toxicity$$

(Please note that the term CDI in attached tables 1-4, includes intake rate and contaminant conc)

To estimate the intake, the exposure equations and assumptions discussed in Section 1, are used. The intake estimates for each route of exposure are then combined with the RfDs or SFs to determine the resulting risk.

For Carcinogens Risk:

$$Cancer\ Risk = (Intake_{oral} * Cont.\ conc. * SF_{oral})$$

$$+ (Intake_{inhal} * Cont.\ conc. * SF_{inhal}) + (Intake_{derm} * Cont.\ conc. * SF_{derm})$$

For Noncarcinogens:

$$Hazard\ Index = (Intake_{oral} * Cont.conc. * \frac{1}{RfD_{oral}}) + (Intake_{inhal} * Cont.conc. * \frac{1}{RfD_{inhal}})$$
$$+ (Intake_{derm} * Cont.conc. * \frac{1}{RfD_{derm}})$$

where, taking into account all COCs and relevant exposure pathways, the excess cancer risk is 10^{-6} or the hazard index is 1.0.

Using REAMS software a maximum acceptable contaminant concentrations will be calculated which meets the cumulative risk criteria. This process will be used in this risk assessment to derive the health-based cleanup criteria for the site. If the estimated risks satisfy the risk based performance standards, the soils/groundwater will be considered clean closed.

Table 1
Risk Assessment Algorithm for Carcinogenic Exposure

Exposure Route	[illegible]	[illegible]
Ground Water		
Ingestion	$\dfrac{CW \times IRW_{adj} \times EF}{AT_c}$	$\dfrac{CW \times IRW_a \times EF_o \times ED_o}{BW_a \times AT_c}$
Inhalation	$\dfrac{CW \times IRA_{adj} \times EF \times K}{AT_c}$	$\dfrac{CW \times IRA_a \times EF_o \times ED_o \times K}{BW_a \times AT_c}$
Dermal	$\dfrac{CW \times SAW_{adj} \times PC \times ET \times EF \times CF}{AT_c}$	$\dfrac{CW \times SAW_a \times PC \times ET \times EF_o \times ED_o \times CF}{BW_a \times AT_c}$
Soil		
Ingestion	$\dfrac{CS \times IRS_{adj} \times CF \times FI \times EF}{AT_c}$	$\dfrac{CS \times IR \times CF \times FI \times EF_o \times ED_o}{BW_a \times AT_c}$
Dermal	$\dfrac{CS \times CF \times SAS_{adj} \times AF \times ABS \times EF}{AT_c}$	$\dfrac{CS \times CF \times SAS_a \times AF \times ABS \times EF_o \times ED_o}{BW_a \times AT_c}$
Inhalation of vaporizing VOCs from soil	$\dfrac{CS \times 1/VF \times IRA_{adj} \times ET \times EF}{At_c}$	$\dfrac{CS \times 1/VF \times IRA_a \times ET \times EF_o \times ED_o}{BW_a \times AT_c}$
Inhalation of emitting particles from soil	$\dfrac{CS \times 1/PEF \times IRA_{adj} \times ET \times EF}{AT_c}$	$\dfrac{CS \times 1/PEF \times IRA_a \times ET \times EF_o \times ED_o}{BW_a \times AT_c}$

Table 2
Risk Assessment Algorithm for Non-carcinogenic Exposure

Exposure Route	[illegible]	[illegible]
Ground Water		
Ingestion	$\dfrac{CW \times IRW_c \times EF \times ED_c}{BW_c \times AT_n}$	$\dfrac{CW \times IRW_a \times EF_o \times ED_o}{BW_a \times AT_n}$
Inhalation	$\dfrac{CW \times IRA_c \times EF \times ED_c \times K}{BW_c \times AT_n}$	$\dfrac{CW \times IRA_a \times EF_o \times ED_o \times K}{BW_a \times AT_n}$
Dermal	$\dfrac{CW \times SAW_c \times PC \times ET \times EF \times ED_c \times CF}{BW_c \times AT_n}$	$\dfrac{CW \times SAW_a \times PC \times ET \times EF_o \times ED_o \times CF}{BW_a \times AT_n}$
Soil		
Ingestion	$\dfrac{CS \times IRS_c \times CF \times FI \times EF \times ED_c}{BW_c \times AT_n}$	$\dfrac{CS \times IRS_a \times CF \times FI \times EF_o \times ED_o}{BW_a \times AT_n}$
Dermal	$\dfrac{CS \times CF \times SA_c \times AF \times ABS \times EF \times ED_c}{BW_c \times AT_n}$	$\dfrac{CS \times CF \times SA \times AF \times ABS \times EF_o \times ED_o}{BW_a \times AT_n}$
Inhalation of vaporizing VOCs from soil	$\dfrac{CS \times 1/VF \times IRA_c \times ET \times EF \times ED_c}{BW_c \times AT_n}$	$\dfrac{CS \times 1/VF \times IRA_a \times ET \times EF_o \times ED_o}{BW_a \times AT_n}$
Inhalation of emitting particles from soil	$\dfrac{CS \times 1/PEF \times IRA_c \times ET \times EF \times ED_c}{BW_c \times AT_n}$	$\dfrac{CS \times 1/PEF \times IRA_a \times ET \times EF_o \times ED_o}{BW_a \times AT_n}$

Note: Occupational noncarcinogenic risk assessment is based on adult exposure

Table 3
Age Adjusted Factors

$$IRA_{adj} = \frac{ED_c \times IRA_c}{Bw_c} + \frac{(ED_{tot} - ED_c) \times IRA_a}{BW_a}$$

$$IRW_{adj} = \frac{ED_c \times IRW_c}{Bw_c} + \frac{(ED_{tot} - ED_c) \times IRW_a}{BW_a}$$

$$SAW_{adj} = \frac{ED_c \times SAW_c}{Bw_c} + \frac{(ED_{tot} - ED_c) \times SAW_a}{BW_a}$$

$$IRS_{adj} = \frac{ED_c \times IRS_c}{Bw_c} + \frac{(ED_{tot} - ED_c) \times IRS_a}{BW_a}$$

$$SAS_{adj} = \frac{ED_c \times Sa_c}{Bw_c} + \frac{(ED_{tot} - ED_c) \times SA_a}{BW_a}$$

<u>Note regarding age adjusted factor:</u>

Because contact rate with tap water, ambient air, and residential soil are different for children and adults, carcinogenic risks during the first 30 years of life were calculated using age adjusted factor. These factors approximate the integrated exposure from birth until age 30 by combining contact rates, body weights, and exposure durations for two age groups - small children and adults.

Table 4
Exposure Variables Included in Tables 1, 2, and 3

ABS	Absorption factor	-	User specified	
AF	Adherence factor	-	1.45	a, c
AT_c	Averaging time carcinogens	days	25550	
AT_n	Averaging time non-carcinogens	days	ED x 365	
BW_a	Body weight adult	kg	70	c
BW_c	Body weight child	kg	15	c
CF	Conversion factor	-	0.000001	-
CS	Chemical concentration in soil	mg/Kg-day	User specified	
CW	Chemical concentration in water	mg/L	User specified	
EDc	Exposure duration child	years	6	c
ED_{total} ED	Exposure duration for carcinogen total or Residential	years	30	c
EDo	Exposure duration occupational	years	25	c
EF	Exposure frequency residential	days	350	c
ET	Exposure Time General/Occupational Groundwater Surface Water - ingestion Surface water - dermal Air -inhalation	hrs/day	8.0 0.2 2.6 2.6 24.0	c, d
FI	Fraction ingested Residential Occupational	-	1.0 0.5	b
IRA_a	Inhalation rate air adult	m^3/day	20	b
IRA_{adj}	Inhalation rate - air adjusted	-	11.66	
IRA_c	Inhalation rate child	m^3/day	12	b
IR	Ingestion rate food Fruit/veggies Fish	kg/day	0.28 0.122 0.054	c,d

[illegible]	Term	[illegible]	[illegible]	[illegible]
IRS_a	Ingestion rate soil adult	mg/day	100	b
IRS_c	Ingestion rate soil child	mg/day	200	b
IRS_{adj}	Ingestion - soil adjusted	-	114.29	
IRW_a	Ingestion rate water adult	L/day	2	b
IRW_{adj}	Ingestion -water adjusted	L-y/kg-d	1.09	
IRW_c	Ingestion rate water child	L/day	1	b
K	Volatilization factor, water to air	-	0.5	
PC	Permeability constant	cm/hr	User specified	b
PEF	Particulate emission factor	m^3/kg	6.789926E08	f
SAW_c	Surface area child groundwater dermal surface water dermal	cm^2	7500	b,e
SAS_a SAS_c	Surface area soil occupational - adult child	cm^2/event	4500 1875	e
SAS_{adj}	Surface area soil ajusted	cm^2/event	2290	
SAW_a	Surface area for water contact adult	cm^2	820	b
SAW_{adj}	Surface area for water contact	cm^2/event	9200	
VF	Volatilazation factor, soil to air	m^3/kg	User specified	-

References:

a. Risk Assessment Guidance for Superfund, Volume I, EPA/540/1-89/002, December 1989.

b. Region III values

c. Exposure Factors handbook, EPA/600/8-89/043, July 1989

d. Human health evaluation manual supplemental guidance, OSWER Directive 9285.6-03. March 25, 1991.

e. Dermal exposure Assessment, Principles and Applications, Interim Report. EPA/600/8-91/011b. January 1992.

f. Technical Background Document for Draft Soil Screening Level Guidance. Office of Solid Waste and Emergency Response. EPA/540/R-94/101. December 1994.

ATTACHMENT I

TTF CLOSURE QUALITY ASSURANCE PROJECT PLAN

ENVIRONMENTAL ALLIANCE

THERMAL TREATMENT FACILITY CLOSURE QUALITY ASSURANCE PROJECT PLAN

September 8, 2011

Prepared For:

AEROJET

Aerojet Corporation
7499 Pine Stake Road
Culpeper, VA 22701
EPA ID# VAD981112618

Prepared By:

ENVIRONMENTAL ALLIANCE

Environmental Alliance, Inc.
5341 Limestone Road
Wilmington, DE 19808
(302) 234-4400

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TITLE AND APPROVAL PAGE

TTF CLOSURE
QUALITY ASSURANCE PROJECT PLAN

PROJECT DIRECTOR: ______________________ DATE: ______________________

William Smith, P.G.
Principal Hydrogeologist

PROJECT ENGINEER: ______________________ DATE: ______________________

David Morgan
Project Engineer

QA MANAGER: ______________________ DATE: ______________________

Julie Ann Turner
Project Environmental Scientist

ENVIRONMENTAL ALLIANCE

GROUP A: PROJECT MANAGEMENT

A1 TITLE AND APPROVAL SHEET

A2 TABLE OF CONTENTS

A3 DISTRIBUTION LIST

Copies of the approved QAPP and any subsequent revisions will kept on file at Environmental Alliance, Inc.'s Headquarter office and will be sent to Aerojet and the VDEQ.

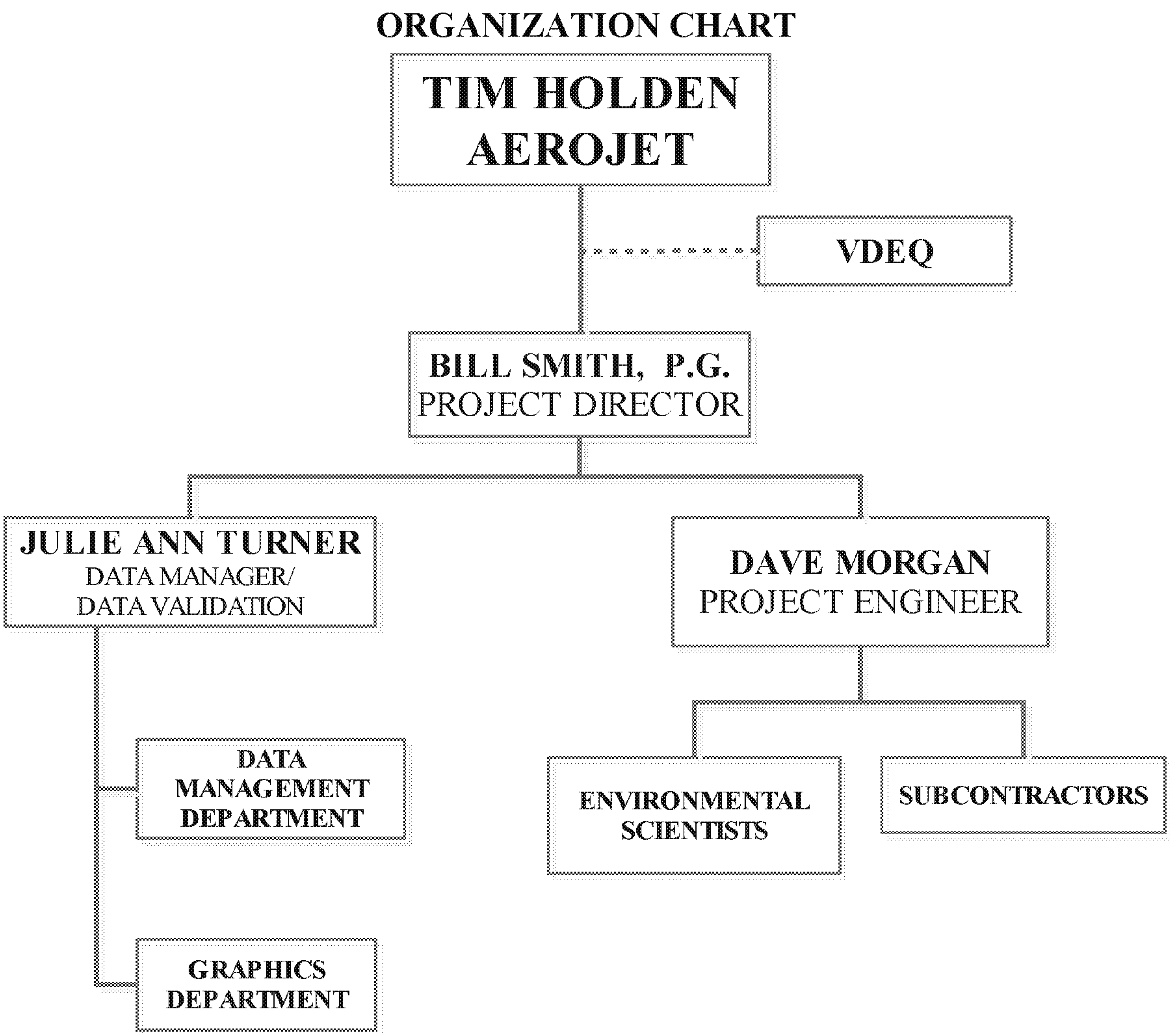
A4 PROJECT/TASK ORGANIZATION

This Quality Assurance Project Plan (QAPP or Plan) focuses on policies and objectives that are designed to achieve data quality objectives for the tasks that may be required as part of the closure process. The QAPP is a structured plan that describes the policies and procedures for ensuring that work processes, products, or services satisfy stated expectations or specifications and is organized in accordance with U.S. Environmental Protection Agency (EPA) guidance (EPA QA/R-5). The QAPP integrates all technical and quality aspects of a project, including planning, implementation, and assessment. This QAPP is intended for general issues and may need to be adjusted to reflect site-specific conditions at the time of closure activities. This QAPP provides sufficient detail to demonstrate that:

- The project technical and quality objects are identified and agreed upon;
- The intended measurements, data generation, or data acquisition methods are appropriate for achieving project objectives;
- Assessment procedures are sufficient for confirming that data of the type and quality needed and expected are obtained; and
- Any limitations on the use of the data can be identified and documented.

Project Management / Roles

This section addresses the basic area of project management, including objectives, roles and responsibilities of the participants. Refer to the organization chart below.



Mr. Timothy Holden of Aerojet is directly responsible for the project implementation and management, correspondence with VDEQ, and financial assurance.

Environmental Alliance, Inc. (Alliance) will oversee all technical aspects for this project. Mr. William Smith, P.G., is the contract Project Director, responsible for bringing forth the technical resources necessary to perform the scope of work. Mr. David Morgan is the Project Engineer responsible for the planning and implementation of the closure activities. Ms. Julie Ann Turner is the designated Quality Assurance Officer for this project, will oversee the data validation, where necessary.

The laboratory will be selected at the time of commencement of closure activities (indeterminate at this time).

A5 PROBLEM DEFINITION/BACKGROUND

EPA granted the former Atlantic Research Corporation facility located in Orange County, VA a RCRA Research, Development and Demonstration (RD&D) permit (EPA ID Number VAD981112618) on January 30, 1987. The purpose of the RD&D permit was twofold: (1) to develop and demonstrate an effective containment pan design for thermal treatment of waste solid rocket propellant and (2) to assess environmental impacts and performance of open burning operations at a new facility with established pre-existing (baseline) environmental conditions. The RD&D Permit was issued following the EPA approval of an Operational Monitoring Plan for the various media (groundwater, surface water, surface soil, and air) in the vicinity of the thermal treatment area that could be affected by open burning operations. EPA approved the Operational Monitoring Plan in August of 1990, and thermal treatment events began being conducted at the facility in September of 1990. Aerojet General Corporation (Aerojet) acquired the Orange County, VA facility from Atlantic Research Corporation in October 2003.

The approximately 2,400-acre facility is generally rectangular in shape with access roads and over 40 buildings and magazines located throughout the property. The facility is characterized by small hills and valleys, and the majority of the facility is wooded or undeveloped. Prior to the initial purchase of the property in 1986 by ARC, the area was primarily unimproved fields, woods and farmland. Aerojet operates a RCRA thermal treatment facility (TTF) on-site for destruction of energetic (propellant) waste by open burning. Non-energetic hazardous waste residue generated at the thermal treatment facility are accumulated and shipped off-site for further management.

The purpose of this Plan is to achieve final closure of the thermal treatment units (TTUs) when necessary, pursuant to a Closure Plan for the TTF that will have been approved by the VDEQ. The TTUs will have achieved clean closure, when all hazardous waste or hazardous waste constituents of concern (HCOCs) have been removed from the TTUs to levels such that direct contact with any parts of the TTUs or any HCOCs that remain after closure will not pose a threat to human health or the environment, nor adversely impact any environmental media in excess of established exposure levels.

Achievement of clean closure will be demonstrated by the systematic removal of hazardous waste, by decontamination of the equipment, structures, and soils and subsoils (if needed), and by comparison of the HCOCs in the sample compliance data to one of four decontamination standards as specified in the Closure Plan. Potential HCOCs that will be analyzed include, but are not limited to, the following:

- Ammonium perchlorate: Method 314 or 8321A or 6850
- Metals: Method 6010 or compound specific
- HMX/RDX: Method 8330
- VOCs: Method 8260
- SVOCs: Method 8270
- Dioxins / Furans: Method 8290
- TCLP: Method 1311
- Reactivity: SW-846 Chapter 8.3
- pH: Method 150.1, 9040B, or 9045

A6 PROJECT / TASK DESCRIPTION

This Plan has been prepared to support the data collection that will be performed as part of the RCRA closure of the Aerojet Orange County TTF. As part of the TTF closure, soil samples will be collected to characterize the soil chemistry to determine which, if any, soils may require treatment and/or disposal prior to final closure.

A7 QUALITY OBJECTIVES AND CRITERIA

The Data Quality Objectives (DQOs) are to implement the RCRA closure of the Aerojet Orange County TTUs.

Separate data quality requirements have been designed for field sampling and laboratory analysis to assist the reviewer in identifying the sources of any discrepancies found within the data. The data quality requirements are also designed to provide an indication of the variability inherent in the overall system. Quality control samples, duplicates, specific field sampling protocol, and standard operating procedures are steps taken to address the possible sources of variability in analytical results relating to the project.

Overall Quality Assurance Project Objectives

The overall quality assurance objective is that data generated during this investigation, in conjunction with data from the previous investigations conducted, is appropriately obtained. The objectives were achieved by using the following Data Quality Objective (DQO) process (EPA QA/G-4, Guidance for the Data Quality Objectives Process).

1. State the problem
2. Identify the decision
3. Identify the inputs to the decision
4. Define the study boundaries
5. Develop a decision rule
6. Specify limits on decision errors
7. Optimize the design for obtaining data

The DQO can be evolved from data quality indicators (DQI). DQI are qualitative and quantitative descriptors used in interpreting the degree of acceptability or utility of data. The principal DQIs are precision, accuracy, representativeness, comparability, and completeness

(PARCC). Establishing acceptance criteria for the DQI sets quantitative goals for the quality of data generated in the analytical measurement process.

Precision is a measure of agreement among replicate measurements of the same property, under prescribed similar conditions. Precision will be determined through the use of field duplicates, matrix spike/matrix spike duplicates and duplicate quality control samples. The Relative Percent Difference (RPD) between the two results will be calculated and used as an indication of the precision of the analyses performed.

The following formula should be used to calculate precision:

$$RPD = \frac{(C_1 - C_2)}{(C_1 + C_2)/2} x100$$

Where: RPD = relative percent difference

C_1 = larger of the two observed values

C_2 = smaller of the two observed values

Accuracy is a measure of the closeness of an individual measurement or the average of a number of measurements to the true value. Accuracy includes a combination of random error (precision) and systematic error (bias) components that result from sampling and analytical operations. Accuracy is determined by analyzing a constituent of known concentration or by reanalyzing a sample to which a constituent of known concentration has been added. The analytical accuracy will be expressed as the percent recovery (%R) of a surrogate analyte. The surrogate analyte is added to the environmental sample at a known concentration before analysis and the percent recovery calculated according to the following equation.

$$\%R = 100x\frac{S - U}{C_{sa}}$$

Where: $\%R$ = percent recovery
S = measured concentration in spiked aliquot
U = measured concentration in unspiked aliquot
C_{sa} = actual concentration of spike added

Representativeness is a measure of the degree to which data accurately and precisely represent a characteristic of a population parameter at a sampling point or for a process condition or environmental condition. Representativeness is a qualitative term that should be evaluated to determine whether *in-situ* and other measurements are made and physical samples collected in such a manner that the resulting data appropriately reflect the media and phenomenon measured or studied.

Comparability is the qualitative term that expresses the confidence that two data sets can contribute to a common analysis and interpolation. Comparability must be carefully evaluated to establish whether two data sets can be considered equivalent in regard to the measurement of a specific variable or groups of variables. In laboratory analysis, the term comparability focuses on method type comparison, holding times, stability issues, and aspects of overall analytical quantification.

Completeness is a measure of the amount of valid data obtained from a measurement system, expressed as a percentage of the number of valid measurements that should have been collected (i.e., measurements that were planned to be collected). Lack of completeness is a vital concern with stratified sampling. The intensity of effect due to incompleteness of data is sometimes best expressed as a qualitative measure and not just as a quantitative percentage. Data completeness will be expressed as the percentage of valid data obtained from the measurement system. For data to be considered valid, it must meet all the acceptable criteria including accuracy and precision, as well as any other criteria required by the prescribed analytical method.
The following formula should be used to calculate completeness:

%C = 100 times {V over n}

Where: %C = percent completeness

V = number of measurements judged valid

n = total number of samples

Secondary DQIs include sensitivity, recovery, memory effects, limits of quantitation, repeatability, and reproducibility.

Sensitivity is the capability of a method or instrument to discriminate between measurement responses representing different levels of a variable of interest. Sensitivity is determined from the value of the standard deviation at the concentration level of interest. It represents the minimum difference in concentration that can be distinguished between two samples with a high degree of confidence.

Recovery is an indicator of bias in a measurement. In this case, spikes and/or surrogates may be added to the sample matrix. The recovery is often stated as the percentage measured with respect to what was added.

A memory effect occurs when a relatively high-concentration sample influences the measurement of a lower concentration sample of the same analyte when the higher concentration sample precedes the lower concentration sample in the same analytical instrument.

The limit of quantitation is the minimum concentration of an analyte in a specific matrix that can be identified and quantified above the method detection limit and within the specified limits of precision and bias during routine analytical operating conditions.

Repeatability is the degree of agreement between independent test results produced by the same analyst using the same test method and equipment on random aliquots of the same sample within a short time period.

Reproducibility is the precision that measures the variability among the results of measurements of the same sample at different laboratories. It is usually expressed as a variance and low values of variance indicate a high degree of reproducibility.

Laboratory Data Quality Objectives

The laboratories used for this project will demonstrate analytical precision and accuracy by the analysis of laboratory duplicates and matrix spikes. Laboratory accuracy will be demonstrated by the addition of surrogate and matrix spike compounds to characterize the behavior of similar analytes contained in the particular sample matrix. Accuracy will be presented as percent recovery.

Precision will be reported as relative percent difference (RPD).

Laboratory blanks will also demonstrate accuracy with respect to the analyses. The frequency of laboratory duplicates, matrix spikes, and blanks and standard calibration checks will be performed according to the laboratory's Standard Operating Procedures.

The laboratories used for this project will be expected to perform all analyses to provide the best possible representation of the sampling point. The project laboratories will also be expected to document any analytical problems encountered during the course of analysis and report these discrepancies in the narrative section of the deliverables package. The "CLP like" deliverable packages will contain documentation that will assure that analytical methods, parameters, and reporting units are comparable with other existing data.

A8 SPECIAL TRAINING/CERTIFICATION

All project personnel including subcontractors will be 40-hour OSHA safety trained and current in their annual 8-hour refresher. The laboratories utilized will be licensed in Virginia.

A9 DOCUMENTS AND RECORDS

The quality assurance guidelines for the compilation of data begin by the proper organization of data to be evaluated. The initial organization process begins with following the quality assurance procedures regarding sampling and logging, labeling and documentation of samples collected in the field. This process continues with maintaining chain-of-custody from sample collection through sample analysis at the laboratories selected for this project. This preliminary organization process concludes with the reporting process by the laboratories for this project that will provide documentation in a "Contract Laboratory Procedure (CLP)"-like data deliverable package. The data deliverable package will include the submission of the complete raw data for data validation review and be available along with electronic data to the VDEQ upon request.

Presentation of the data gathered will involve the manipulation of data in tables and graphic displays to make evaluation of data easier and facilitate the decision making process. All of the data collected should be inserted into data summary tables to create an accessible pool of information. From this point, the data can be grouped together to illustrate various observations, such as concentrations of variable constituents detected above applicable guidelines.
Base maps of the site should be made illustrating site conditions and sampling locations.

All project related files (both hard copy and electronic copies) will be maintained at Alliance. The electronic files use typical operating system security and are backed up regularly to tape and taken off-site. Electronic copies of laboratory-related files (i.e., EQuIS database files) will be made available to VDEQ, if requested.

GROUP B: DATA GENERATION AND ACQUISITION

This section addresses all aspects of data generation and acquisition to ensure that appropriate methods for sampling, measurement and data analysis, data collection or generation, data handling, and quality control activities are employed and documented.

B1 SAMPLING PROCESS DESIGN – SAMPLING GRID PATTERNS

Aerojet has developed the following Sampling and Analysis Plan for soil in order to define the nature and extent of potential soil contamination.

Soil assessment will initially be carried out for the floor of the treatment area immediately around where the burn pans were located (an approximately 20-foot by 40-foot area) in each of the three active thermal treatment units (TTU-1, TTU-2, and TTU-4). An approximate 10-foot by 10-foot grid pattern will be established in this 20-foot by 40-foot area and samples will be collected at the corner of each 10-foot by 10-foot (approximate) square (totaling 15 node points).

Samples will be collected from borings advanced with a four-inch diameter hollow-stem auger, by direct push (e.g., Geoprobe) methods, or by manual methods (e.g., hand auger). A split spoon sampler (two-inch diameter) ,Geoprobe macro-core, or other appropriate device (e.g., hand auger) will be used to collect the samples. Samples will be procured over one-foot intervals (from 0-12 inches and 12-24 inches) to a total depth of 24 inches. While advancing each boring, the soil will be inspected for overt evidence of contamination (e.g., staining), and the physical properties (color, texture, structure, entrained-treated residuals, etc.) will be observed. Soil type along with any irregularities will be described in field notes. Any cuttings generated during the boring process will be used to backfill the boreholes.

A similar 10-foot by 10-foot grid will be established in a 20-foot by 40-foot area of the Facility believed to be unaffected by past waste management practices. Background samples will be collected from this grid in the same manner as described above for initial soil sampling events within the TTUs. Alternatively, Aerojet may collect background samples from multiple areas of the Facility that are unaffected by past waste management practices (e.g, 5 sample locations in 3 distinct areas of the Facility). The VDEQ shall approve the locations for background soil sampling prior to sample collection. Samples will be collected from approximately fifteen locations, with grab samples collected from homogenized soil over two distinct depth intervals (from depths of 0-12 inches and 12-24 inches), and analyzed for naturally occurring constituents (metals) according to the methods specified on Table 1 of the Closure Plan for use in statistical comparison with samples taken from the TTUs. Physical properties of the background soil samples will also be recorded in field notes to determine comparability with TTU soils.

B2 SAMPLING METHODS

To obtain the required soil samples, the following procedures will be implemented to demonstrate specific data quality requirements:

- Obtain laboratory-prepared sample containers prior to sampling.
- Don disposable sampling gloves prior to collecting sample.
- Collect sample utilizing a decontaminated manual (e.g., shovel, trowel, disposable scoop, hand auger, or sampling probe) or mechanical (e.g., Geoprobe macrocore or auger) soil collection device. Measure and record the sampling depths at each location (0 – 12" and 12 – 24"). Care will be taken to decontaminate all equipment.
- Using dedicated or decontaminated sampling devices, discrete grab samples will be collected at the top of each 12" interval for VOC analysis using laboratory-supplied containers and/or collection devices.
- Soil will then be homogenized over the remainder of the 12" depth interval in decontaminated stainless steel bowls, dedicated plastic bags, or equivalent. Turn soil in mixing bowl with dedicated latex gloves, or equivalent, until soil is evenly distributed in bowl.
- Discrete grab samples will be collected of the homogenized soil (over the 12" depth profile) in laboratory-supplied bottleware. No compositing of soil is permitted.

- Obtain duplicate and blank samples at the frequency outlined in this QAPP.
- Label the sample containers using stick-on labels and waterproof ink. Labels will include the following information:
  - Sample identification number.
  - Project name and identification number.
  - Date and time of sample collection.
  - Type of analysis requested.
  - Name or initials of sampler.
- Fill out and sign chain-of-custody form.

Enter into bound field logbook the following:

- Project name and identification number.
- Name or initials of sampler.
- Sample identification number.
- Date and time of sample collection.
- Location where the sample was obtained.
- Notes on soil type and any irregularities noted in the sample.
- Note the locations where dioxin/furan analysis is requested.
- Weather conditions at the time of sampling.
- Any additional remarks.

The following additional activities should take place after collecting samples:

- Mark location on site map as well as placing a flag at the sampling point.
- Check that sample jar caps are secure then place on ice immediately.
- Store the collected samples together with any blank samples collected for that sampling event. The sample set and blanks must be stored together, under refrigeration, in an area known to be free of contamination.
- Transport selected samples on ice to the laboratory along with chain-of-custody.

B3 SAMPLE HANDLING AND CUSTODY

The primary objectives of sample custody procedures are to create accurate written records that can be used to trace the possession and handling of all samples from the moment of their collection through analysis, until their final disposition. Custody documentation for samples collected during this investigation must be maintained by all members of the field and management staff. The field personnel are responsible for documenting each sample transfer and maintaining custody of all samples until they are shipped to the laboratory.

The project laboratory will ship all necessary sample bottles. The chain-of-custody will begin with the laboratory relinquishing sampling bottles. Sample bottles will be relinquished by the identified field staff after a thorough check of the integrity of the bottles and inspecting the bottles for correct application to the sampling task to be conducted.

Immediately after soil or aqueous sample collection, samples will be placed in an insulated cooler (containing ice for preservation) for shipment to the laboratory. Field chain-of-custody records completed at the time of sample collection will accompany the sample cooler for shipment to the project laboratories. The samples will be relinquished on the field chain-of-custody record by the sampling team. Each cooler will contain sufficient ice to maintain determined preservation temperatures and stored in a manner which prevents damage to sample containers. The sampler will initial and place a custody seal on each sample cooler. All coolers will be relinquished to an overnight courier or be transported by the approved laboratory under proper chain-of-custody.

Each separate sample will be identified using a sample label. The sampler will complete all information, using a black waterproof pen, as follows:

- The sample ID number will be the number assigned to the particular sampling location.
- The job number will be the number assigned to the particular facility.

- The analysis required will be indicated for each sample using approved analytical methodologies.
- Date taken will be the date the sample was collected, using the format: MM/DD/YY.
- Time will be the time the sample was collected, using military time. Example: 1430 hrs.
- The sampler's name or initials will be printed in the "Sampled By" section.
- The container will also be marked to indicate preservation technique.

This sample label contains the authoritative information for the sample. Inconsistencies with other documents will be settled in favor of the vial label unless otherwise corrected in writing from the field personnel collecting the samples.

All samples analyzed by the project laboratories are to be considered to be of an evidentiary nature. The possession of samples must be traceable from the time samples are collected in the field until the analysis is completed and the data are entered as evidence. The tracing of the samples is accomplished by chain-of-custody procedures. A chain-of-custody record will be completed for each set of samples. The sampler will sign the first "Relinquished By" line at the bottom of the chain-of-custody record and indicate the date and time of the custody transfer. Samples will not leave custody of the field investigator until relinquished to another party.

Custody is defined as:

- In the actual physical possession of field personnel.
- In the field personnel's view after being in physical possession.
- In a locked area after being in physical possession.
- In a designated, locked storage area.

Upon arrival at the project laboratories, the Sample Custodian at each laboratory is responsible for maintaining possession of the chain-of-custody samples and for maintaining all records documenting that possession. Upon receipt of samples, the sample custodian signs the shipping report accompanying each sample and records the date and the time. A copy of this record becomes part of the report file. The custodian signs the chain-of-custody "Received By" laboratory space. The samples are then secured under lock and key in refrigerated storage. After each extraction or analysis of a sample fraction, the custody record is signed by the analyst, indicating the date and time of completion, which samples were used and to which location they were returned. By signing the custody record, the individual affirms that he was completely responsible for the sample fraction during the period of time it was not in the secure storage.

B4 ANALYTICAL METHODS

Laboratory Analyses

The project laboratories will utilize standard EPA methodologies listed in Table 1 of the Closure Plan to analyze samples collected for constituents of concern. The detection / quantitation limits for the analyses listed are set by the method used for specific analyses by the project laboratories. All detection / quantitation limits established will be the lowest available by the specific technology used for analyses at the project laboratories. The laboratory analysis objective is for the resulting data to be utilized in conjunction with field screening activities for site characterization, environmental monitoring, and confirmation of field data. Laboratory analytical data has Level III protocols with built in QA/QC requirements, including calibration runs, surrogate standards, etc. External QA samples will be included in the form of trip blanks, equipment blanks, and duplicate samples (as appropriate per analytical suite) submitted with the samples.

Analytical Method Selection

The analytical methods specified cover the project target list to include those compounds deemed to pose a potential hazard to human health and the environment. All analytical methods are selected to obtain the most accurate representation of the sampling point possible. The selected laboratory will utilize the following standard EPA analytical methods to analyze constituents of concern (refer to Tables 1 and 3 of the Closure Plan for specific soil constituents):

- Perchlorate: Method 314 or 8321A or 6850
- Metals: Method 6010 or compound specific
- HMX/RDX/Nitroglycerin: Method 8330
- VOCs: Method 8260
- SVOCs: Method 8270
- Dioxins / Furans: Method 8290
- TCLP: Method 1311
- Reactivity: SW-846 Chapter 8.3
- pH: Method 150.1, 9040B, or 9045

The method detection limit selection is based on the real assessment and analytical characterization data quality objectives. The methods selected specify the frequency and acceptance criteria for all associated control samples.

Laboratory Selection

The laboratory will be selected at the time of commencement of closure activities (indeterminate at this time).

B5 QUALITY CONTROL

The following subsections involve the implementation of checks to be conducted by the Quality Assurance Officer. These checks are to ensure that quality assurance procedures are being implemented in conducting field tasks and that these procedures are producing the desired level of confidence in data quality.

Field Sampling Quality Control Checks

The field sampling quality control checks monitor the data quality as it is affected by field procedures. Several types of sample blanks may be used during the implementation. A list of these various sample blanks and their collection procedures are as follows:

Equipment (or Rinsate) Blank - Reagent water poured through the sampling equipment after routine cleaning. This sample is preserved and subsequently handled like all others. This blank is used to assess the potential for carryover contamination on non-disposable sampling equipment. **A minimum of one rinsate blank will be submitted per sampling day**.

Field Blank - A sample of the water used to generate the equipment blank, preserved and handled like all others. **A minimum of one field blank will be submitted per sampling day**.

Trip Blank - Reagent water prepared by the laboratory and sealed in the sampling container. It is handled as other samples except that it is not opened or preserved (other than chilling). This sample focuses on external sources of contamination and sampling container quality and cleanliness. **Every shipment of VOCs will include one trip blank**. The aqueous trip blanks will serve for both soil and water matrices.

Duplicate Samples - Blind field duplicates (as opposed to duplicate containers full of sample intended as backup) are sequential grab samples collected to monitor field precision. **One duplicate will be taken and submitted per twenty (20) samples or one per day.**

Laboratory Quality Control Checks

The internal quality control checks to be routinely implemented by the laboratory include the following:

- Replicates - A minimum of 5% of all samples will be duplicated (unspiked) in the lab. Duplicate injections will be made for all samples and must be within 20% RPD to be acceptable.
- Spikes for metals - Matrix spiked samples will be prepared in the lab and will be analyzed with the samples at a rate of 5%. In addition to these pre-digestion spiked samples, a matrix spike is performed on every metals sample for furnace AA and for those samples not meeting the pre-digest spike control limits for other techniques. These matrix spikes determine the necessity for the Method of Standard Additions calibration technique.
- Matrix samples - Volatile and semi-volatile organic samples will be matrix spiked with the suggested matrix spike compound at a frequency of one per twenty samples per matrix or every fourteen days, whichever occurs most frequently. A matrix spike duplicate will be prepared simultaneously.
- Surrogate spikes - Surrogate compound spikes are placed into all samples and all matrices for organic analysis prior to sample preparation.
- Blanks - Blanks will be analyzed at a minimum of one daily for metals and one every twelve hours or twenty organic samples, whichever is more frequent. These blanks are referred to as method blanks. The acceptability limits for method blanks is to be below the designated EPA Method detection level.
- Quality Control Standards - Quality control standards (often referred to as spiked reference materials) traceable to the U.S. EPA or generated from concentrates prepared separately from calibration standards, will be included at a rate dependent on sample matrix and lab performance with matrix spikes. The minimum is one QC standard to validate the initial calibration. For metals analysis after every 20 samples, a QC or mid-range calibration standard will be analyzed to continuously verify that calibration is within 10% of the initial calibration. For organic analyses after every 12 hours of operation, a QC or mid-range standard will be analyzed to continuously verify that the calibration is within 10% of the initial calibration. For organic analyses after every 12 hours of operation, a QC or mid-range standard will be analyzed to verify that the Calibration Check Compounds are within 25% of the initial calibration curve for volatile

analysis (30% for semi-volatile analysis). Additionally, for organics the system response for System Performance Check Compounds must be verified to be above the minimum levels as described in method SOP.

- EPA or NBS traceable standards will be run at least quarterly. The acceptability limits will be 90 - 110% for inorganic QC samples and as determined by the EPA for organic analyses.
- GC/MS - Once every 12 hours the GC/MS tune must be verified. This tune is followed by the calibration verification, a method blank, and the internal standard response and retention time check before resuming sample analysis.
- GC/MS Internal Standard Response and Retention Times - Immediately after calibration verification the internal standard response must be verified to be within 50% to 200% of the response for the previous verification, and the internal standard retention times must be within 30 seconds of the previous verification run.
- Metals Laboratory Control Sample - A QC sample taken through the entire preparation must be run after calibration and achieve recovery of 90 - 110%.
- Method detection limit will be determined for all analyses within one month of the start of the project and subsequently quarterly. The detection limit so determined must be equal to or below the designated EPA Method detection level. For methods operating under this document, the Method Detection Limit (MDL) will be defined as: *"The minimum concentration that can be measured and reported with 99% confidence that the value is above zero."* It is approximately three times the standard deviation of a set of seven replicates at a concentration very near (within five times) the detection limit. The MDL defines a limit above which false positive readings are very unlikely. However, the relative precision at this limit is expected to be very large and quantification is not reliable. For methods operating under this document, quantification is considered reliable at ten standard deviations above background (i.e., at about three times the MDL). The MDLs are typically included in the method development.

B6 INSTRUMENT/EQUIPMENT TESTING, INSPECTION, AND MAINTENANCE

The following section will detail the quality assurance guidelines to be adhered to by the field personnel for calibration and maintenance of their equipment.

During the course of this investigation, various field measurements may be taken during sampling. All instruments used during site activities to determine the level of personal protective equipment required and/or to screen samples will be calibrated daily prior to usage and/or as specified in the manufacturer's protocols. The following section details the calibration methodology for numerous types of standard field instrumentation.

Field equipment is maintained through daily maintenance procedures conducted in the field will include:

- Removal of surface dirt and debris from exposed surfaces of sampling equipment and measuring systems.
- Storage of equipment away from the elements.
- Daily inspections of sampling equipment and measurement systems for possible problems (e.g., cracked or clogged lines or tubing or weak batteries).
- Calibration of instrument.
- Charging any battery packs for equipment when not in use.

To minimize down time, spare replacement parts should be stored in the field, including:

- Batteries.
- Extra sample containers and preservatives.
- Extra field monitoring probes, sample coolers, packing material and sample location stakes.
- Additional supply of health and safety equipment (i.e., respirator cartridges, boots, gloves, Tyvek, etc.).

B7 INSTRUMENT/EQUIPMENT CALIBRATION AND FREQUENCY

The following section will detail the quality assurance guidelines to be adhered to by the field personnel for calibration and maintenance of their equipment.

Field measurements (if collected) will be in accordance with the field instruments manufacturer's instructions. Each instrument will be field-calibrated as required (a minimum of once daily – before field measurements).

During the course of this investigation, various field measurements may be taken during sampling. All instruments used during site activities to screen samples and to determine the level of personal protective equipment required will be calibrated daily prior to usage and/or as specified in the manufacturer's protocols. The following section details the calibration methodology for numerous types of standard field instrumentation.

In general and at a minimum, all field instruments will be calibrated as specified by the manufacturer and documented as follows:

- The calibration of each instrument/meter shall be recorded in the field log book, as well as maintenance/repair work, and usage, in a standard format including the information listed below.
- Entries to the instrument log books shall be made at least daily whenever the instrument is in use.
- All personnel performing instrument calibrations shall be trained in its operation and calibrating procedures.

B8 INSPECTION/ACCEPTANCE OF SUPPLIES AND CONSUMABLES

Daily inspections of supplies and consumables will be conducted and be in accordance with the field instruments manufacturer's instructions (if applicable) and with Alliance's manual of Standard Operating Procedures.

B9 NON-DIRECT MEASUREMENTS

No non-direct measurements are being used during this investigation.

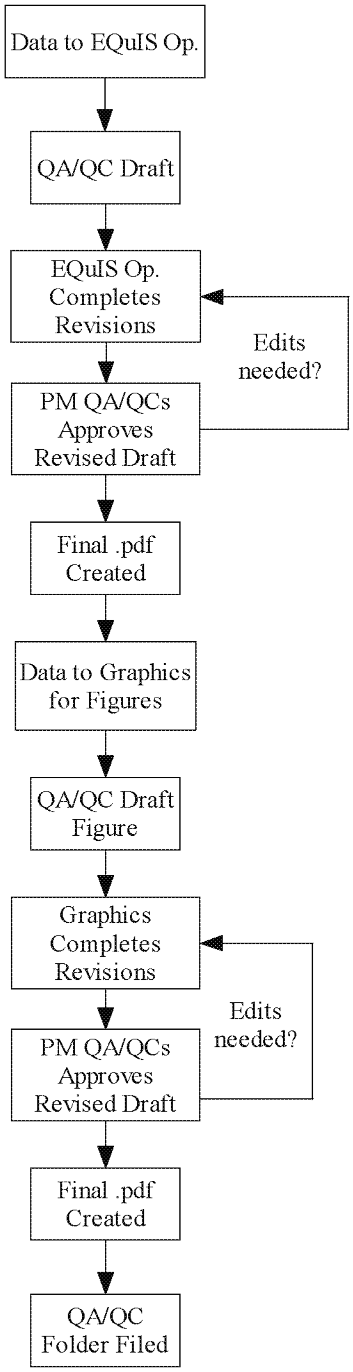
B10 DATA MANAGEMENT

The Database System that Alliance utilizes is the "Environmental Quality Information System (EQuIS)" which is based on Microsoft Office products and written for the Microsoft Windows operating system. Therefore, all existing data and new data is easily imported and exported to different products that are used for diagrams, graphs, tables, and figures. This Database System provides an integrated suite of applications and a common database management system for all organizations involved in the data collection, processing, management, and evaluation aspects of environmental project work.

Laboratory data is electronically transmitted to Alliance in common electronic data deliverable (EDD) formats. Once received, the Alliance data management department uploads the data into the EQuIS database system. Field data is manually entered into EDDs and uploaded into the EQuIS database system. Once the data has been fully incorporated into the database, it can then be easily exported into the programs that are used to graphically represent the data (i.e., Grapher, Surfer, AutoCAD, ARCView, etc.).

The following diagram represents the basic flow of data and graphics through the integrated data management system.

SIMPLE EDM FLOW DIAGRAM



Op - Operator
PM - Project Manager

GROUP C: ASSESSMENT AND OVERSIGHT

This section describes activities that will be conducted to ensure data quality.

C1 ASSESSMENTS AND RESPONSE ACTIONS

A review of field notes, chain of custody forms, laboratory analytical data, and laboratory data validation reports will be conducted throughout the course of investigation activities. The review will be conducted by the Project Director or by a member of the project team designated by the Project Director. The laboratory will be responsible for their quality control / quality assurance criteria. It is up to the discretion of the Project Director to perform an on-site laboratory audit.

If an error is suspected during the course of assessment, one or more of the following response actions may be taken:

- A new sample may be collected or the sample may be re-analyzed if sufficient sample volume remains and the sample is within the appropriate holding time for that analysis.
- Equipment calibrations will be repeated and the measurement taken again.
- The equipment will either be repaired or replaced.
- A second piece of equipment will be on hand (if possible) to replace and/or verify measurements taken with a suspect piece of equipment.

The appropriate response action will be determined by the Project Director and appropriate personnel on a case-by-case basis. The Project Director will oversee implementation of the response action.

C2 REPORTS TO MANAGEMENT

The Project Director will oversee the preparation of update reports designed to keep project team members appraised of investigation activities. The report frequency and content will be at the discretion of the Project Director. The distribution of update reports will be at the discretion of the Project Director.

GROUP D: DATA VALIDATION AND USABILITY

All data will be evaluated to document its validity. The three activities associated with the data evaluation are: data compilation, data validation, and data presentation. The purpose of these practices is to manage and effectively evaluate (in terms of quality assurance and quality control) the quality of a large amount of data anticipated to be generated by the facility investigation. By implementing these practices, a confidence in the accuracy and representativeness of the data obtained can be assured. The following subsections present discussions of data compilation, data validation, and data presentation.

D1 DATA REVIEW, VERIFICATION, AND VALIDATION

A Type 1 data package (CLP like for non-CLP methods) will be requested from the analytical laboratory. Upon the tabulation of all data, the overall quality of the project data can be evaluated, as well as an overall picture of the environmental characterization of the site. The validation of the data, and its subsequent evaluation, will follow the requirements of:

- The Sampling and Analysis Plan;
- The QAPP;
- The laboratory Quality Assurance Plan (QAP)
- US EPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (EPA, June 2008)
- US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (EPA, October 2004).
- Where the EPA Method is not considered a standard CLP method (i.e., Method 314.0), the validation process is checked for completeness as per method requirements.

Upon receipt of the hard copy analytical results, Alliance will validate the data. In addition, the results of the field duplicates and blanks will be evaluated at this time along with comparisons using previous and field screening data. Alliance has a team for data validation. It is dependent on the availability of the team members as to who will be the validator for specific data packages. It can be noted that no validator would be involved with sample collection.

D2 VERIFICATION AND VALIDATION METHODS

Verification and validation methods are discussed throughout this document.

D3 RECONCILIATION WITH USER REQUIREMENTS

Presentation of the data gathered will involve the manipulation of data in tables and graphic displays to make evaluation of data easier and facilitate the decision making process. All of the data collected will be inserted into data summary tables to create an accessible pool of information. From this point, the data can be grouped together to illustrate various observations, such as concentrations of variable constituents. Bar and line graphs may be used to illustrate change in constituent concentration per unit variable such as time or distance. Pie charts can be used to illustrate constituent concentration percentages identified at specific locations or overall sampling locations. Statistical analysis will be conducted, where appropriate.

Base maps of the site should be made illustrating site conditions and sampling locations.

REGION III QAPP Preparation Checklist

Site Name:	Aerojet Orange County Facility	Preparer:	Julie Ann Turner
Document Title(s):	Thermal Treatment Facility Closure Quality Assurance Project Plan	Date of QAPP:	September 2011

Instructions for Use of Checklist:

Below is an explanation of the header items and instructions for each item. **The QAPP preparer is to fill in the Location of Element column and the Comments column when appropriate.**

IA = Included and Acceptable IU = Included and Unacceptable NI = Not included NA = Not Applicable

Reference Code (Section #)	***Elements & Required Information***	***IA***	***IU***	***NI***	***NA***	***Location of Element in Submitted Document (Section #, Table #, figure #, etc)***	***COMMENTS***
Reference Codes are provided on page 20. These references are to assist preparers in identifying additional information concerning QAPP contents	*Element description; specific Region III requirements are included when applicable*	*These four columns are for EPA use during review of the document and do not require preparer input*				***Preparer enters the appropriate section number, page number, table or figure reference where the element can be located in the QAPP; include references to other documents when applicable (Work Plans, Sampling Analysis Plans, etc.)***	***Enter any relevant comment; include justification for omitting an element***

Attachments:

References are provided on Page 20 of this checklist.

The Data Quality Objective Process is provided in Attachment 1. ***This process is recommended to assist preparers with Elements A5 through A7.***

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PROJECT MANAGEMENT							
	Title & Approval Page						
	Includes title of plan					Title Page	
	Includes name of the organizations					Title Page	
1 (A1)	*Includes names, titles, signatures of appropriate officials and their approval dates*					Title Page	
	Table of Contents (Lists sections, figures, tables, references, and appendices)					Section A2	
1 (A2)	*Effective Document Control Format*					Page A-2	
1 (A3)	*Distribution List (Lists all the individuals and their organizations who will receive copies of the approved QAPP and any subsequent revisions.)*					Section A-3	
	Project Organization						
1 (A4)	*Identifies key individuals or organizations participating in the project with their responsibilities (e.g., data users, decision-makers, project QA manager, subcontractors, etc.)*					Section A-4	

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	PROJECT MANAGEMENT						
	Identifies/Describes individual(s) responsible for overall QA/AC (Project QA manager is independent of the data generating unit)					Section A-4	
	Identifies individual(s) responsible for sampling operations and sampling QC					Section A-4	
	Identifies individual(s) responsible for data processing and data processing QC					Section A-4	
	Identifies organization(s) involved with data analysis					Section A-4	
	Identifies individual(s) responsible for data validation (needs to be independent of data generator/laboratory)					Section A-4	
	Project Organization Chart(s) [Shows lines of authority and reporting responsibilities, includes contractors and subcontractors]. Includes EPA's role and other stakeholders/decision makers.					Section A-4	
	Site Background						
	Includes a list of the known and suspected contaminants in each medium and estimates of their concentration, variability, distribution, and location.					Not Applicable	
	Includes the site's physical and chemical characteristics that influence migration and associated human, environmental and physical targets.					Not Applicable	
	Includes a conceptual site model and exposure pathways					Not Applicable	
	Includes a summary of the outcome and status of any previous response(s) at the site, such as early actions or previous data collection activities					Not Applicable	
1 (A5)	Includes Site Maps (historical & present)					Closure Plan	

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	PROJECT MANAGEMENT						
1 (A5) 2 (Chap.1) 3 (Chap. 1) 4 (Chap. 1)	Problem Definition						
	Includes statement(s) of the decision(s) that will be made based on the outcome of the field investigation					Closure Plan	
	Includes list of actions that will be taken toward remediation or removal of the potential contamination problem based on the outcome of the field investigation					Closure Plan	
	Includes the types of informational inputs needed for decision (e.g., sampling, modeling, or a combination of these approaches). If applicable, include collection of previous data collection (identifying sources).					Closure Plan	
	Identifies Applicable technical quality standards or criteria (e.g., ARARS, State standards, other federal agency standards, action levels).					Closure Plan	
	Includes specific action levels and the criteria for choosing between alternative actions					Closure Plan	
	Includes a decision rule - an "if...then...." statement that defines the conditions that would cause the decision maker to choose among alternative courses of action. The decision rule should include the decision, the actions, the parameter of interest and the action level.					Closure Plan	
1 (A6) 4 (Chap. 3)	Project Description & Schedule						
	Provides a description of the work to be performed; provides sufficient information as to the project's goals and types of activities to be conducted					Section B1	

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	PROJECT MANAGEMENT						
	Includes special personnel and equipment requirements that may indicate the complexity of the project (particularly for any new or innovative sampling or analytical technique being employed)					Section A8	
	Includes Project Schedule Timeline (graphical or tabular format). Includes start and completion dates for all project activities (including quality assurance assessments).					Closure Plan	
	Includes procedure for notification of project participants concerning schedule delays (identify job function, org. name, personnel responsible for providing and receiving such notification, and personnel responsible for approving schedule changes)					Closure Plan	
	Includes discussion of resource and time constraints, such as seasonal sampling restrictions and considerations (if applicable)					Not Applicable	
1 (A7)	Quality Objectives & Criteria						
	Lists measurement methods for each item of necessary information (list chemical and/or biological analytical methods). Specific tables may be included here or under A7 and/or B4 of this checklist. Tables need to include Project Action limits, project quantitation limits and laboratory detection limits.					Table 1 Closure Plan And Section B4	
	Includes the range of anticipated concentrations of the parameters of interest					Not Applicable	
	Defines and evaluates the potential consequences of decision errors (i.e., false positive error or false negative error) near the action level.					Section B5	

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	PROJECT MANAGEMENT						
	Includes how sufficient data will be collected to ensure that the proposed action limits are not exceeded after remediation and/or removal of contaminants of concern.					Section B1 & Closure Plan	
	Describes when screening and definitive data[1] will be used to make site decisions. Also, defines limitations on the use of screening data. For screening data being used for site decisions, at least 10% must be confirmed by fixed laboratory. Provides justification when not confirming.					Not Applicable	
	Addresses Precision (quantitative measurement performance criteria, QA/QC activities, and/or QC checks/samples being used to determine acceptable precision for each matrix, analytical parameter and concentration level). Includes equations to be used to calculate precision.					Section A7	
	Addresses Accuracy (quantitative measurement performance criteria, QA/QC activities, and/or QC checks/samples being used to determine acceptable accuracy/bias for each matrix, analytical parameter and concentration level). Includes equations to be used to calculate accuracy.					Section A7	
	Addresses Representativeness (quantitative measurement performance criteria, QA/QC activities being used to determine representativeness for each matrix, analytical parameter and concentration level).					Section A7	

[1] For definition of screening and definitive data see reference 2.

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	PROJECT MANAGEMENT						
	Addresses Comparability (quantitative measurement performance criteria, QA/QC activities, and/or QC checks/samples being used to determine comparability for each matrix, analytical parameter and concentration level). Sampling and analytical procedures are consistent within and between data sets.					Section A7	
	Provides criteria for comparing oversight split sampling, if applicable.					Not Applicable	
	Provides Comparability criteria for field screening/confirmatory results, if applicable.					Not Applicable	
	Addresses Completeness. If applicable, includes a list of critical samples. Includes equations to be used to calculate completeness.					Section A7	
	Includes a table with the project's QA objectives for precision, accuracy and completeness. The QA objectives should include requirements for "Total system" variability and bias not just laboratory error or criteria (Total system = sampling design error + measurement error).					Not Applicable	
	Special Training Requirements/Certification Listed (Unique methods, Validators, Water Plans)						
1 (A8)	Lists or states how training is provided, documented, and assured					Not Applicable	
	Documentation and Records						
1 (A9)	Itemizes the information and records (field operation records, laboratory records, data handling records) that must be included in the data report package and specifies the desired reporting format for hard copy and electronic forms					Section B10	

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	PROJECT MANAGEMENT						
	Identifies any other records and documents applicable to the project, such as audit reports, interim progress reports, and final reports, that will be produced. Includes electronic data from instrumentation (tapes).					Section B10	
	Specifies or references all applicable requirements for the final disposition of records and documents, including location and length of retention period.					Section A9	
	States Revisions/updates to QAPP are every 3-5 years					Not Applicable	
	MEASUREMENT/DATA ACQUISITION ELEMENTS						
	Sample Design						
	Identifies Type (composite, grab, etc.) and number of samples required. Table format recommended. Provides justification for type and number of samples; MDL rationale/impact. Identifies Background samples (if applicable)					Section B1	
	Sampling Process Design (Experimental Design) [Describes the experimental design or data collection design for the project]					Section B1	
	Sample Locations and frequency (e.g. map)					Section B1 & Closure Plan	
1 (B1)	Sample & Analysis Methods (General description)					Section B1 & Closure Plan	

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PROJECT MANAGEMENT							
	Sample matrices					Section B1 & Closure Plan	
	Classifies each measurement parameters as either critical or needed for information only					Not Applicable	
	Provides Appropriate validation study information; for nonstandard situations					Section D1	
	Sampling Methods Requirements						
	Identifies sample collection procedures and methods (if referencing sampling, SOPs may be attached to QAPP)					Section B2	
	Describes filtering procedures, if applicable.					Not Applicable	
	Describes sequencing of samples, if applicable					Not Applicable	
	Describes homogenizing of samples, if applicable					Not Applicable	
	Identifies support facilities					Not Applicable	
1 (B2)	Identifies individuals for corrective action. Describe decision/who's responsible and documentation required.					Section A4	

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	PROJECT MANAGEMENT						
	Includes Sampling SOP Modifications					Closure Plan	
	Provides Cleaning & Decontamination Procedures of Equipment/Sample Containers [Decontamination Procedures includes acid, water, and solvent rinse (methanol is preferred solvent)]; SOPs					Closure Plan	
	Provides Sampling Containers, Volumes, Holding Times, & Preservation Table					Table 1 Closure Plan	
	Provides Field Sampling Equipment Calibration w/ table					Section B7	
	Identifies Field Equipment Maintenance, Testing & Inspection Requirements					Section B6	
	Provides Inspection & Acceptance Requirements for Supplies/Sample Containers					Not Applicable	
	Sample Handling, Tracking & Custody Requirements *Note: Laboratory QAP should included information about laboratory sample handling and custody.*						
	Provides Sample Handling, Tracking & Custody SOPs with Sample Handling Flow Diagram (used for multiple sampling events with multiple laboratories)					Section B3	
1 (B3)	Provides Sample Collection Documentation (includes form to track custody)					Section B3	

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	PROJECT MANAGEMENT						
	Provides Sample Container Label / Sample Tag (include examples)					Not Applicable	
	Identifies Field Notes (lists information to be entered in field logbook)					Section B2	
	Documents source of field reagents or supplies, includes sample containers					Section B2	
	Includes procedures/forms for recording the exact location and specific consideration associated with sample acquisition					Closure Plan	
	Documents specific preservation method (including temperature upon receipt)					Table 1 Closure Plan	
	Analytical Methods Requirements						
	Provides SOPs and validation information for nonstandard methods					Not Applicable	
	Provides 10% offsite laboratory confirmation for screening methods					Not Applicable	
	Identifies laboratory (ies)					Not Applicable	
	Includes laboratory(ies) information (QA Manual, SOPs, PE results, certifications) *[Use LQAP checklist if LQAP submitted separately]*					Not Applicable	
1 (B4)	Identifies individuals responsible for corrective action					Section A4	

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	PROJECT MANAGEMENT						
	Specifies needed laboratory turnaround time (if important to the project schedule)					Not Applicable	
	Provides Field Analytical Methods & SOPs (includes modifications if applicable)					Not Applicable	
	Provides Field Analytical Instrument Calibration					Section B7	
	Provides Field Analytical Instrument/ Equipment Maintenance Testing & Inspection Requirements					Section B6	
	Identifies Field Analytical Inspection & Acceptance Requirements for Supplies					Not Applicable	
	Provides Fixed Lab Analytical Method Requirements (include sub-sampling, preparation, cleanup, or extraction methods/procedures) *[Use LQAP checklist if LQAP was submitted separately]*					Not Applicable	
	Provides Fixed Lab Analytical Methods & SOPs (includes modifications if applicable; includes reporting limits, etc.) *[Use LQAP checklist if LQAP was submitted separately]*					Not Applicable	
	Provides Fixed Lab Instrument Calibration procedures *[Use LQAP checklist if LQAP was submitted separately]*					Not Applicable	
	Identifies Fixed lab Instrument/Equipment Maintenance, Testing & Inspection Requirements *[Use LQAP checklist if LQAP was submitted separately]*					Not Applicable	
	Identifies Fixed Lab Inspection & Acceptance Requirements for Supplies (audits) *[Use LQAP checklist if LQAP was submitted separately]*					Not Applicable	

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	PROJECT MANAGEMENT						
	Quality Control Requirements (Identifies required measurement QC checks for both the field and the laboratory)						
	Includes Trip blank (1/cooler containing volatiles)					Section B5	
	Includes Field blank (1 blank/matrix/day or 1 blank/20 samples/matrix, whichever is more frequent)					Section B5	
	Includes Rinsate/Equipment Blank (1 blank/matrix/day or 1 blank/20 samples/matrix, whichever is more frequent)					Section B5	
	Includes Temperature Blank (1/cooler)					Section B5	
	Includes Field Duplicate (1 duplicate/20 samples)					Section B5	
	Includes Matrix Spike/Matrix Spike Dup (1/20 samples/matrix)					Section B5	
	Identifies acceptance criteria and corrective action for QC procedures					Section B5	
	Identifies Field Analytical QC (calibration check samples), includes frequency and limits					Not Applicable	
1 (B5)	Provides Fixed Laboratory QC procedures, frequency and limits *[Use LQAP checklist if LQAP was submitted separately]*					Not Applicable	
	Instrument/Equipment Testing, Inspection, and Maintenance Requirements						
1 (B6)	Identifies acceptance testing of sampling and measurement systems					Section B6	

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	PROJECT MANAGEMENT						
	Describes equipment preventative and corrective maintenance					Section B6	
	Notes availability and location of spare parts					Section B6	
	Instrument Calibration and Frequency						
	Identifies equipment needing calibration and frequency for such calibration					Not Applicable	
	Identifies frequency of calibration verification or continuing calibration					Not Applicable	
	Notes required calibration standards and/or equipment					Not Applicable	
1 (B7)	Cites calibration records and manner traceable to equipment					Not Applicable	
	Inspection/Acceptance Requirements for Supplies and Consumables						
	States acceptance criteria for supplies and consumables					Not Applicable	
1 (B8)	Notes responsible individuals					Not Applicable	

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	PROJECT MANAGEMENT						
	Data Acquisition Requirements for Non-Direct Measurements (Historical/Databases/Modeling)						
	Identifies types of data needed for non-measurement sources (e.g., computer databases and literature files), along with acceptance criteria for their use					Not Applicable	
	Describes any limitations of such data					Not Applicable	
1 (B9)	Documents rationale for original collection of data and its relevance to this project					Not Applicable	
	Data Management *Can be included in separate Data Management Plan*						
	Describes Data Recording (Describes standard record-keeping and data storage and retrieval requirements)					Section B10	
	Describes Data Validation (Details the process of data validation; should address how the method, instrument, or system preforms the function it is intended to - consistently, reliably, and accurately when generating the data) *Note: Part D addresses the overall project data validation*					Section D1	
1 (A9, B10)	Describes Data Transformation (Documents Procedures) Data transformation is the conversion of individual data point values into related values or possibly symbols using conversion formulas or a system for replacement) *Note: Transformation and aberration of data for statistical analysis should be outlined in element D3.*					Not Applicable	

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PROJECT MANAGEMENT							
	Describes Data Transmittal (Describes each data transfer step and the procedures used to characterize data transmittal error rates and to minimize information loss in transmittal)					Section B10	
	Describes Data Reduction - involves irreversible reduction in the size of the data set and an associated loss of detail. (For manual calculation, includes an example of how raw data is reduced; for automated data process, indicates how the raw data are to be reduced with a well-defined audit trail, and references specific software documentation)					Section B10	
	Describes Data Analysis (includes an outline of the proposed methodology with a more detailed discussion included in final report)					Section B10	
	Describes Data Tracking (describes procedures for tracking the flow of data through the data processing system)					Section B10	

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Reference Code (Section #)	***Elements & Required Information***	***IA***	***IU***	***NI***	***NA***	***Location of Element in Submitted Document (Section #, Table #, figure #, etc)***	***COMMENTS***
PROJECT MANAGEMENT							
	Describes Data Storage and Retrieval (describes procedures for data storage and retrieval including security and time of retention included; includes documentation of the complete control system; discusses performance requirements of the data processing system, including provisions for the batch processing schedule and the data storage facilities). Includes storage and retrieval of electronic data (needs to be available upon EPA request)					Section B10	
ASSESSMENT/OVERSIGHT ELEMENTS							
1 (C1)	Assessments and Response Actions						
	Lists required number, frequency and type of assessments, with approximate dates and names of responsible personnel (assessments include but are not limited to peer reviews, management systems reviews, technical systems audits, performance evaluations, and audits of data quality)					Section C1	
	Identifies individual(s) responsible for corrective actions					Section C1	
	Provides Feedback from performance audits (field and laboratory)					Not Applicable	
	Includes Schedule of audits					Not Applicable	
	Reports to management						
1 (C2)	Identifies frequency and distribution of reports for project status					Section C2	

IA = Included and Acceptable IU = Included and Unacceptable NI = Not included NA = Not Applicable							
Reference Code (Section #)	***Elements & Required Information***	***IA***	***IU***	***NI***	***NA***	***Location of Element in Submitted Document (Section #, Table #, figure #, etc)***	***COMMENTS***
PROJECT MANAGEMENT							
	Identifies frequency and distribution of reports for results of performance evaluations and audits					Not Applicable	
	Identifies frequency and distribution of reports for results of periodic data quality assessments					Not Applicable	
	Identifies frequency and distribution of reports for changes in the QAPP					Closure Plan	
	Identifies frequency and distribution of reports for any significant QA problems indicating EPA is notified immediately					Closure Plan	
	Identifies frequency and distribution of reports for preparers and recipients of reports					Closure Plan	
DATA VALIDATION AND USABILITY ELEMENTS							
	Data Review						
	Describes the procedures being used to review field and laboratory data to ensure that it meets requirements specified in field and analytical SOPs.					Section D3	
1 (D1)	Includes project-specific calculations or algorithms					Not Applicable	
	Identifies issue resolution procedure and title(s) of individual(s) responsible for issue resolution					Section A4	
1 (D2) 5 6	Data Verification and Validation Methods						
	Describes process for data validation and verification (provide SOPs or reference Region III Modifications to National Functional Guidelines for Data Review)					Section D1	

IA = Included and Acceptable IU = Included and Unacceptable NI = Not included NA = Not Applicable							
Reference Code (Section #)	***Elements & Required Information***	***IA***	***IU***	***NI***	***NA***	***Location of Element in Submitted Document (Section #, Table #, figure #, etc)***	***COMMENTS***
	PROJECT MANAGEMENT						
7	Identifies issue resolution procedure and title(s) of individual(s) responsible for issue resolution					Section A4	
	Identifies method for conveying these results to data users					Closure Plan	
1 (D3)	Data Quality Assessment						
	Describe the procedures used to evaluate the uncertainty of data acquired during sampling and analytical procedures.					Closure Plan	
	Describes the procedures that will be used to reconcile project results with DQOs.					Closure Plan	
	Describes how the limitation on use of the data will be reported.					Closure Plan	

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References

1. EPA Requirements for Quality Assurance Project Plans, EPA QA/R5, March 2001. Can be downloaded from the Internet at http://www.epa.gov/QUALITY/qa_docs.html.

2. Data Quality Objectives Process for Superfund: Interim Final Guidance (EPA, 1993)

3. EPA Guidance on the Data Quality Objectives Process, EPA QA/G-4, September 2000. Can be downloaded from the Internet at http://www.epa.gov/QUALITY/qa_docs.html

4. Data Quality Objectives Process for Hazardous Waste Site Investigations, EPA QA/G-4HW, January 2000. Can be downloaded from the Internet at http://www.epa.gov/QUALITY/qa_docs.html

5. Region III Modifications to the National Functional Guidelines for Inorganic Data Review, April 1993. Can be obtained from May Edwards - edwards.may@epa.gov

6. Region III Modifications to the National Functional Guidelines for Organic Data Review, November 1994. Can be obtained from May Edwards - edwards.may@epa.gov

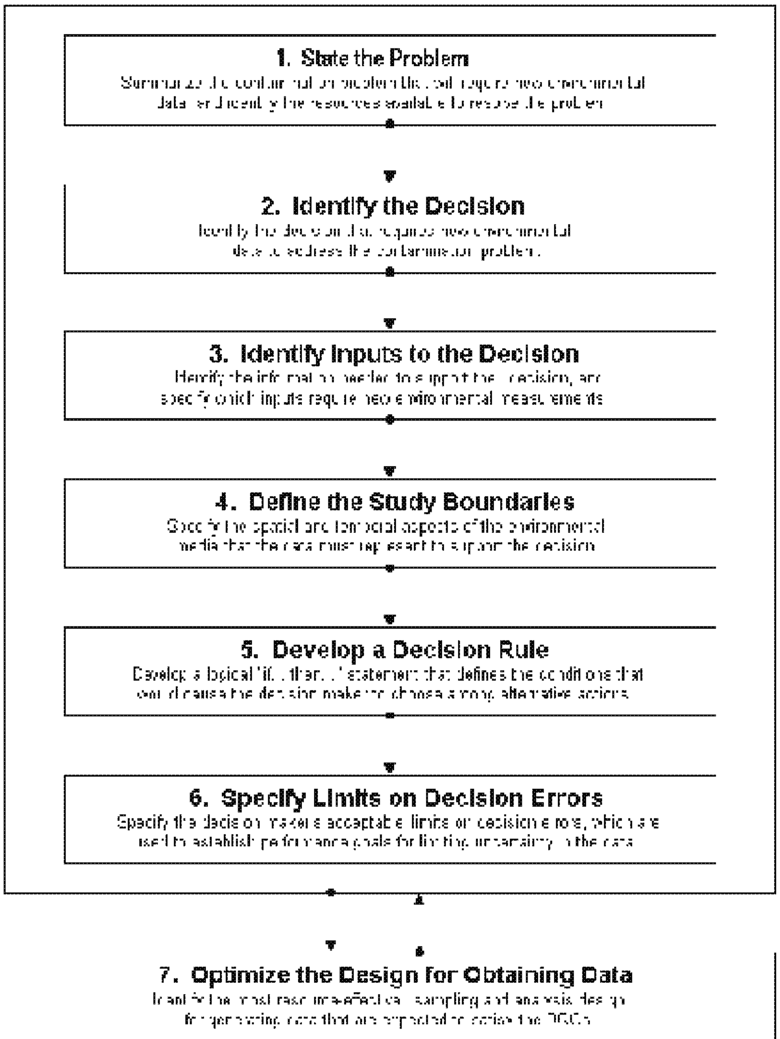
7. Region III Innovative Approaches to Data Validation, June 1995. Can be obtained from May Edwards **- edwards.may@epa.gov**

8. Region III Dioxin/Furan Data Validation Guidance, March, 1999. Can be obtained from May Edwards **- edwards.may@epa.gov**

ATTACHMENT 1

Region III QAPP Preparation Checklist

DQO Process



The Data Quality Objectives Process

ATTACHMENT J

HYDROGEOLOGICAL INVESTIGATION AND MONITORING WELL NETWORK REPORT

ENVIRONMENTAL ALLIANCE

SCHNABEL
ENGINEERING
ASSOCIATES

ONE WEST CARY STREET • RICHMOND, VIRGINIA 23220-5609 • 804-649-7035
506-B COPELAND DRIVE • HAMPTON VIRGINIA 23661-1307 • 804-827-7207
FAX (804) 783-8023

JAMES J. SCHNABEL, P.E
RAY E. MARTIN, Ph.D., P.E.
GERALD C. DAVIT, P.E.
ERNEST WINTER, P.E.
RAYMOND A. DeSTEPHEN, P.E.

EDWARD G. DRAHOS, P.E
JAMES J. SELI, P.E.
GILBERT T. SEESE, P.E.
DAVID L. LUYTJES, P.E.
BRIAN MILNER, Reg. Geophysicist
GARY R. WITSMAN, P.E.
STEPHEN S. HART, P.E.

December 19, 1989

Mr. Michael Young
Atlantic Research Corporation
5945 Wellington Road
Gainesville, Virginia 22065

Subject: Contract V870477, Ground Water Hydrology Services, Research Development, and Demonstration Facility, Orange County, Virginia

Dear Mike:

In accordance with our revised agreement dated August 22, 1988, we are pleased to submit herewith five copies of our report for the above referenced project.

We appreciate the opportunity to be of service for this project. We have enjoyed our relationship during this project and look forward to future opportunities to work together. Please do not hesitate to contact either of the undersigned if clarification is needed for any aspect of this report.

Very truly yours,

SCHNABEL ENGINEERING ASSOCIATES, P.C.

Larry W. Syverson

Larry W. Syverson, C.P.G.
Project Geologist

Raymond A. DeStephen, P.E.
Commonwealth of Virginia

LWS:RAD:rk

Contract V870477, Ground Wate:
Hydrology Services, Research Devel·
opment, and Demonstration Facility
Orange County, Virginia

SCHNABEL
ENGINEERING
ASSOCIATES

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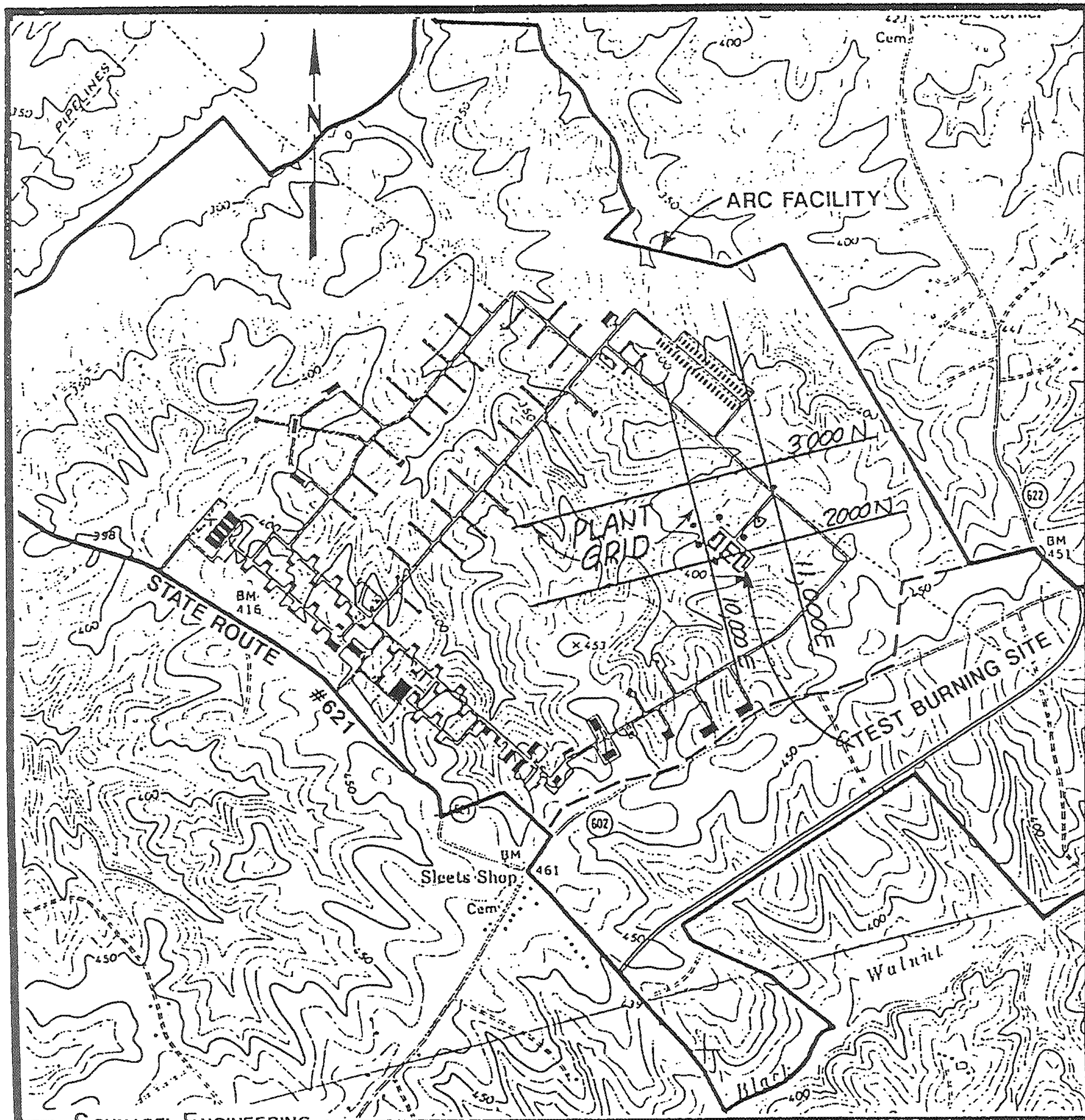
1. INTRODUCTION

This report presents a summary of the procedures, analyses and results of the hydrogeological investigation completed for the site. The general location of the site is shown on Figure 1. The report is organized into five chapters and three appendices. Chapter 1 defines the project objectives and associated scope of work that was performed to achieve the objectives. Chapter 2 presents the general site conditions which include site description, general soil types, regional geology, and the general ground water flow regime. Chapter 3 summarizes the field investigation methodologies including well installation and completion details, and slug tests. Chapter 4 presents results and discussion of the data collected during this project related to site specific hydrogeology. In Chapter 5, the main results are summarized and followed by conclusions and limitations of the present investigation. It is followed by appendices presenting test boring logs and well completion logs.

1.1 PROJECT OBJECTIVES

Atlantic Research Corporation (ARC) proposes to conduct a research development and demonstration project to develop and demonstrate a cost effective tray design for the thermal destruction of composite solid rocket propellant waste. Atlantic Research Corporation filed an application for a "research, development, and demonstration" permit as specified in "The Hazardous and Solid Waste Amendments of 1984". The permit application was filed with the U.S. Environmental Protection Agency (USEPA) on July 3, 1986.



"RESEARCH DEVELOPMENT AND DEMONSTRATION" PERMIT APPLICATION, ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY, VIRGINIA.

SCALE:
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USGS TOPOGRAPHIC MAP
UNIONVILLE QUADRANGLE

LEGEND

●MW MONITORING WELL
●OW OBSERVATION WELL

FIGURE 1
GENERAL LOCATION OF FACILITY AND TEST BURNING SITE

DECEMBER, 1989

V870477

The research project will involve open burning in trays of solid rocket propellant waste resulting from ARC propellant production. The test burning site is located at ARC's new facility just north of the intersection of Routes 621 and 602 in Orange County, Virginia. The general locations of the ARC's facility and the test burning site (the study site) are shown on Figure 1.

As part of the permitting process, a baseline study and monitoring plan are required to establish the background levels. It is also required for subsequent monitoring of potential associated contaminants in the ground water and other potential pathways. The objective of this project was to perform a hydrogeological investigation such that the ground water monitoring requirements agreed upon by Region III of the USEPA could be satisfied.

1.2 SCOPE

In order to accomplish the project objective, Region III of the USEPA was contacted several times during the course of this project to develop the scope of the hydrogeological investigation. The following scope of work was completed for the project:

- Develop a technical proposal outlining the scope of the hydrogeologic investigation for review and approval by USEPA, Region III, Philadelphia;
- Review existing literature on soil types, geology and hydrology including aerial photographs available for the site area;
- Develop a field investigation program to install one observation well and four clusters of monitoring wells;
- Supervise drilling and installation of wells including

geological logging of at least one borehole at each well cluster site;

- Survey elevations of ground surface and top of casing at each well location;

- Perform slug tests;

- Analyze the data for hydrogeological site characterization; and

- Prepare this report that summarizes our findings and presents conclusions.

Collection of the above hydrogeologic data and establishment of the ground water flow direction was made based on installation of initial well clusters MW-1 through MW-4. This preliminary data was compiled in a report dated March 8, 1989, which concluded that additional downgradient wells should be installed to act as compliance monitoring wells for the facility. Recommended locations were found acceptable to EPA Region III during the meeting of June 1, 1989. New well clusters, installed at locations OW-1B and MW-5, have since been installed and well data are included herein. This report contains evaluation of all data collected for the completed ground water monitoring well network and incorporated comments by EPA from the June 1st meeting.

2. GENERAL SITE CONDITIONS

A review of all readily available geologic literature, soil science data and aerial photographs for the general site area is summarized in this section. The summary includes information on soil types, regional geology, the general ground water flow regime, and a fracture trace analysis for the general study area.

2.1 SITE DESCRIPTION

Atlantic Research Corporation's (ARC's) new facility located just north of the intersection of Routes 621 and 602 in Orange County, Virginia is about 2400 acres in size. However, the test burning site including the berms is only about three acres. The general location of the site (test burning site) is shown on Figure 1, while Figure 2 presents the site specific location map surveyed by Stearns L. Coleman, Orange, Virginia. The site is located approximately 3000 ft north of Route 602, 8500 ft northeast of Route 621 parallel to Route 602 and about 6500 ft west of Route 622. According to the ARC's grid system, the site, including monitoring wells, is confined to a square of less than 800 ft on each side. This is bounded by east coordinates E9,800 to E10,600 and north coordinates N1,600 to N2,400.

The site has been cleared, graded and grassed, except the burn pit area. The berms for the burn pits are approximately 12 to 15 ft high with mature grasses providing erosion control. The site is bounded by valleys along its eastern and western boundaries. The valleys deepen and slope away from the site.

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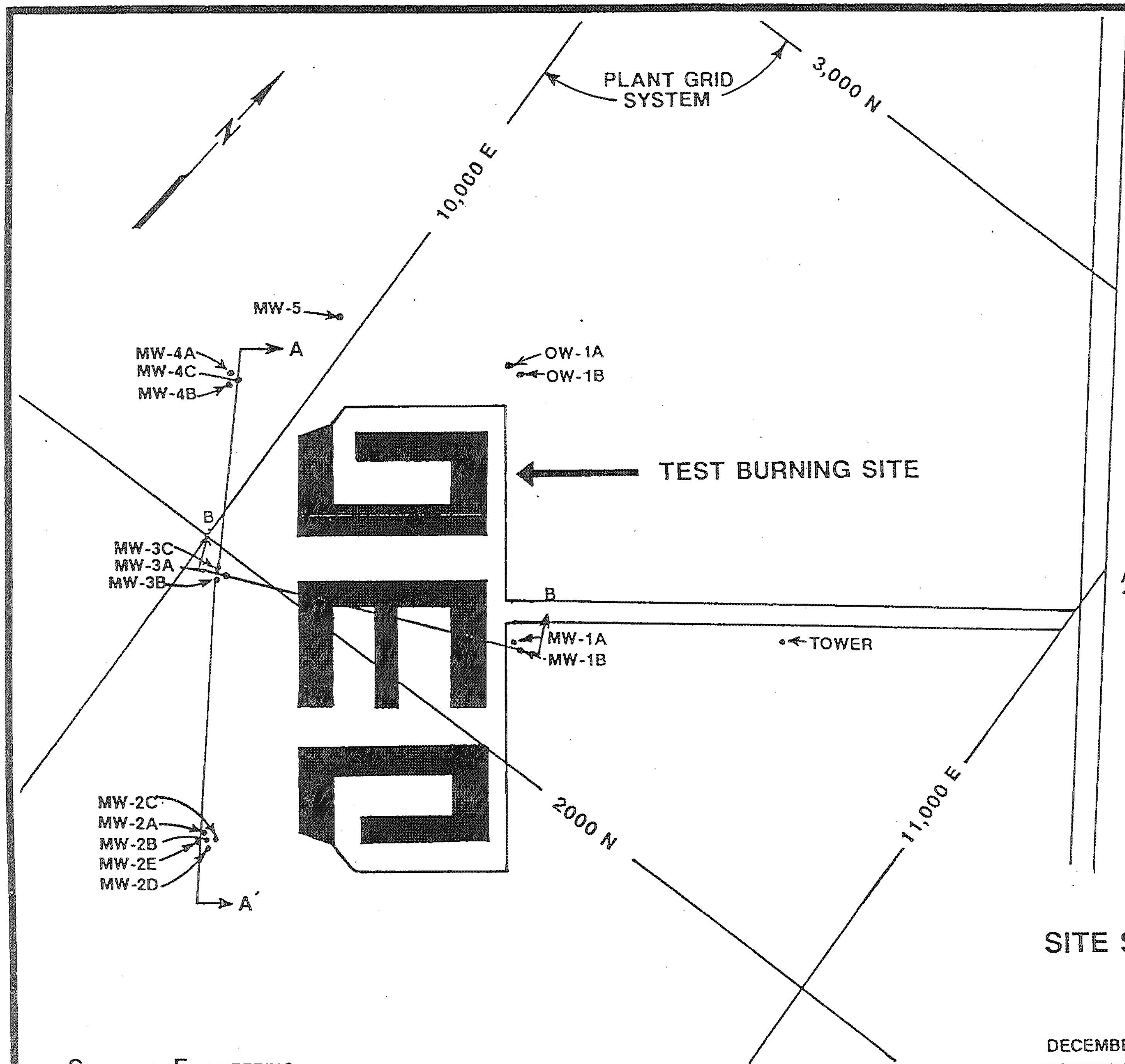

SCALE:

0 200 FT.

(1 IN = 200 FT)

LEGEND

●MW - MONITORING WELL

●OW OBSERVATION WELL

A A´ TRACE OF SUBSURFACE PROFILE

FIGURE 2
SITE SPECIFIC LOCATION MAP

DECEMBER, 1989

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2.2 GENERAL SOIL TYPES

The Soil Survey of Orange County, Virginia (1971) shows the site underlain by soils of the Tatum-Nason Association. The surface layer of these soils is mainly yellow brown silt loam and the subsoil of Tatum soils is mainly red silty clay and silty clay loam, while the subsoil of Nason Soil is mostly strong brown to yellow red silty clay loam. These soils are described as deep, well-drained, gently sloping to moderately steep soils on desiccated uplands of the Virginia Piedmont. They are residual in origin and are derived from the in place weathering of the underlying Candler Formation bedrock. Since soil surveys generally address the upper ten feet or less of the soil profile, and since this study is concerned with the entire subsurface profile above the top of bedrock, no further discussion of soil science is presented.

dissected

2.3 REGIONAL GEOLOGY

2.3.1 Geologic Setting

Orange County is located in the Piedmont Physiographic Province of Virginia, which is underlain by igneous, metamorphic and sedimentary rocks ranging from approximately 200 to more than 600 million years in age. Most of the county is characterized by broad and gently rolling hills, which have been dissected into a series of complex slopes by the action of streams and other erosional agents. The slopes are rounded and commonly mantled by a layer of soil and weathered rock. Thick soil covers in excess of 50 ft are common. The geology of the Virginia Piedmont is not as well understood as that of other provinces because of the limited number of rock outcrops and the complexities of the geologic structure.

2.3.2 Stratigraphy

Since the Unionville quadrangle has not been geologically mapped, there is only general geologic information available for the study area. The Geologic Map of Virginia (1963) indicates the site is underlain by metamorphosed sedimentary rocks of uncertain geologic age. These rocks as defined are interlayered with igneous rocks which collectively were once referred to as the Wissahickon schist and Wissahickon granite.

In an attempt to obtain more detailed geologic data, we contacted Dr. James F. Conley of the Virginia Division of Mineral Resources. According to Dr. Conley the site is underlain by the Candler Formation of Late Precambrian to early Paleozoic age. The Candler consists predominantly of quartz-chlorite-sericite phyllite and schist. The lower part of the Candler includes discontinuous marble lenses and the base of the formation is believed to be conformable with the underlying Catoctin Formation. The top of the Candler contains quartzite layers which grade upward into the metagraywacke siltstone of the Chopawamsic Formation. The contact between the two formations is drawn where metasiltstone and interlayered metavolcanic rocks predominate over phyllite.

2.3.3 Geologic Structure

The Candler Formation follows the regional geologic trend of the area, generally striking 30 to 40 degrees to the northeast. Both foliation and jointing or fracturing are typically present. Foliation dips are usually steep, but considerable variations occur locally. Rectangular joint sets with steeply dipping surfaces are quite common, but again variations are often encountered. No major faults or lineaments have been mapped in the area and we understand the closest major fault occurs along Mountain Run approximately 5000 ft west of the site. This fault trends in a northeasterly direction and separates the Candler Formation from the Everona Formation.

2.4 REGIONAL GROUND WATER FLOW REGIME

In Orange County as well as throughout much of the Piedmont of the southeastern United States, ground water occurs in two basic zones: (1) within permeable soil layers overlying impermeable zones such as clay strata or bedrock, and (2) in fractures within the bedrock. These two water bearing zones are frequently termed the Water Table Aquifer and Bedrock Aquifer, respectively. They may or may not be hydraulically connected depending upon local subsurface conditions. The water table represents the upper surface of the zone of water saturation in the underlying soil or rock. A partially saturated zone occurs above this due to capillary action but this moisture is not considered as part of the ground water regime. The water table will fluctuate based upon the amount of ground water used and the amount of precipitation which infiltrates the soil and rock. Regionally, the maximum amount of ground water withdrawal generally occurs in the summer months, while replenishment or recharge of the system usually occurs during the winter months.

Ground water recharge occurs by the infiltration of precipitation into the overlying soils, ultimately migrating downward into the bedrock fractures. More rapid recharge occurs in areas where precipitation and surface water are in direct contact with fractured bedrock at the ground surface or in stream beds. Regional ground water recharge in the study area occurs along the eastern slopes of the Blue Ridge Mountains, located northwest of the site. Regional ground water flow is into the Rapidan River drainage basin which extends along the northern boundary of Orange County.

Ground water at the site occurs within the residual soils overlying bedrock at depths of about 7 to 46 ft below the ground surface. Ground water flow mimics the surface topography, but in a subdued manner, with flow northwesterly toward an unnamed tributary of Mountain Run which bounds the north side of the tract. Ground water gradients are gentle in the upland areas, and increase beneath the steeper surface slopes.

3. FIELD INVESTIGATIONS

3.1 INSTALLATION OF MONITORING WELLS

Monitoring wells were initially installed in clusters at four locations for periodic monitoring of ground water quality and water level fluctuations. They were designated as MW-1 through MW-4. The locations of these wells are shown on Figure 2. The monitoring wells at each location were installed in a cluster of two to five wells in close proximity to one another. The total number of wells in each well cluster was dependent upon the saturated thickness encountered at the corresponding locations. One well was installed for each ten feet of saturated thickness encountered at each location. There are two wells in cluster MW-1, five wells in cluster MW-2, and three wells each in clusters MW-3 and MW-4. The shallowest well in each well cluster is denoted by a letter "A" after the well number, such as MW-2A. The other wells in each cluster are denoted sequentially with depth, with letters B through E after each well number, such as MW-2B, MW-2C, etc.

Based on the ground water gradient established from the initial wells, additional well clusters were recommended and installed on July 6, 1989 at location OW-1 and MW-5 as indicated on Figure 2. Installation data for these wells is also included herein.

At each well cluster location, a test boring was drilled to document the stratigraphy and obtain samples of various subsurface materials. These test borings were drilled with a 3-3/8 inch I.D. hollow-stem auger. Standard penetration tests (ASTM D-1586) were performed at five-foot intervals and the resulting split spoon samples were recovered. The hollow-stem auger borings were advanced through the surficial and sedimentary soils into the residual soils and decomposed rock. The borings were terminated at auger refusal indicating top of bedrock. Refusal depths corresponded to standard penetration test values of 100 blows for three inches or less of penetration. Based on the stratigraphy and saturated thickness indicated by the test boring, the number of monitoring wells in the cluster and their corresponding screened intervals were selected. The logs of the test borings completed at each well cluster location are presented in Appendix A. The test borings were used to install the deepest wells that penetrated through residual materials to the top of bedrock. The adjacent boreholes completed to install the shallower wells were not logged or sampled. It was assumed that the stratigraphy in these boreholes was similar to that logged in the adjacent test borings. This assumption was verified for the zones representing screened intervals for each well in a cluster. The verification process consisted of logging and sampling the split-spoon soil samples for only the bottom ten feet of the boreholes completed adjacent to the test borings.

The construction of all monitoring wells was similar. At a pre-selected depth, a two-inch I.D., Schedule 40 PVC well screen and riser pipe were inserted through the auger. The screened interval of the well was five feet in length and consisted of a No. 20 slot screen. Washed filter sand (3-Q ROK) was inserted as a filter pack around the screen, in the annulus between the screen and the drilled hole, to a height of one to two feet above the top of the screen except for well MW-4a, which had the filter pack to four feet above the screen. A bentonite clay seal consisting of two to six feet of bentonite pellets was placed above the filter pack. The bentonite seal was hydrated to ensure proper sealing. The remainder of the annulus was filled with fluid bentonite mix to about two feet below the ground surface. No cement was used below the water table in any of the wells. A shallow protective casing with a locking cap was set and a concrete collar was placed around each well. Protective posts were installed around each well cluster.

All monitoring wells were finished at two to three feet above ground surface. The as-built well construction logs of all monitoring wells are presented in Appendix B. The monitoring wells were developed by bailing out water with PVC bailers. Ground water surging was created by the bailers in order to induce the flow reversal in the formation during well development. Total number of bailers of ground water removed for development of each well varied significantly from six bailers-full of water for well MW-1B to 110 bailers for well MW-2E. They are summarized in the as-built well construction logs presented in Appendix B.

3.2 INSTALLATION OF OBSERVATION WELL

Because there was no hydrogeologic data available for the site prior to this study, the initial monitoring well network was established based on an assumed gradient. The ground water gradient was predicted to be westerly. Thus, at assumed upgradient location OW-1 a well was installed for purposes of characterizing the ground water flow field, but not necessarily for inclusion in the monitoring well network. This well was referred to as an observation well and installed at the location shown on Figure 2. However, the drilling method and logging/sampling procedure for the test boring at the observation well location were identical to the procedure followed for monitoring wells as presented in Section 3.1. The ground water was first encountered at 49.5 ft below grade. Upon completion of drilling, a two-inch diameter PVC well was installed. The well installation, completion and development procedures for the observation well OW-1 were identical to the procedures described for monitoring wells in Section 3.1. The test boring log and as-built well construction log for OW-1 are presented in Appendices A and B, respectively.

3.3 SURVEYING

At the completion of well construction, locations of all the wells were surveyed for coordinates with respect to the grid system followed by Atlantic Research Corporation. The grid system is mapped into the USGS topographic map as shown on Figure 1, while the well locations are mapped into ARC's grid system as presented on Figure 2. In addition, the elevations of the ground surface and top of PVC casing at each well location were surveyed. The survey work was preformed by Stearns L. Coleman, Orange, Virginia. The surveyed elevations and location coordinates on ARC's grid system are presented in Appendices A and B for convenience of referencing.

3.4 SLUG TESTS

In situ permeability tests were completed on each monitoring and observation well. These so-called "slug" tests were performed to obtain localized hydraulic conductivities of the strata immediately around the screened interval at each measuring depth. These tests provide insight into the degree of stratification of the various formations. Since slug tests measure the hydraulic conductivities in a relatively small volume, they are not considered representative of the entire formation being tested.

The slug test was performed by "instantaneously" injecting (or removing) a known quantity of water into (or out of) a well and recording the rate at which the water level recovered to its pre-test condition. This was accomplished by both falling head and rising head methods. The falling head method involved applying a constant vacuum on the well and drawing water up the well casing from the formation. Once the water level in the well stabilized under the influence of the vacuum, the vacuum was released. This created the effect of an instantaneous slug of water in the well and the water level change with time was monitored. The rising head method consisted of bailing out water from the well and then monitoring the rise in the water level with time.

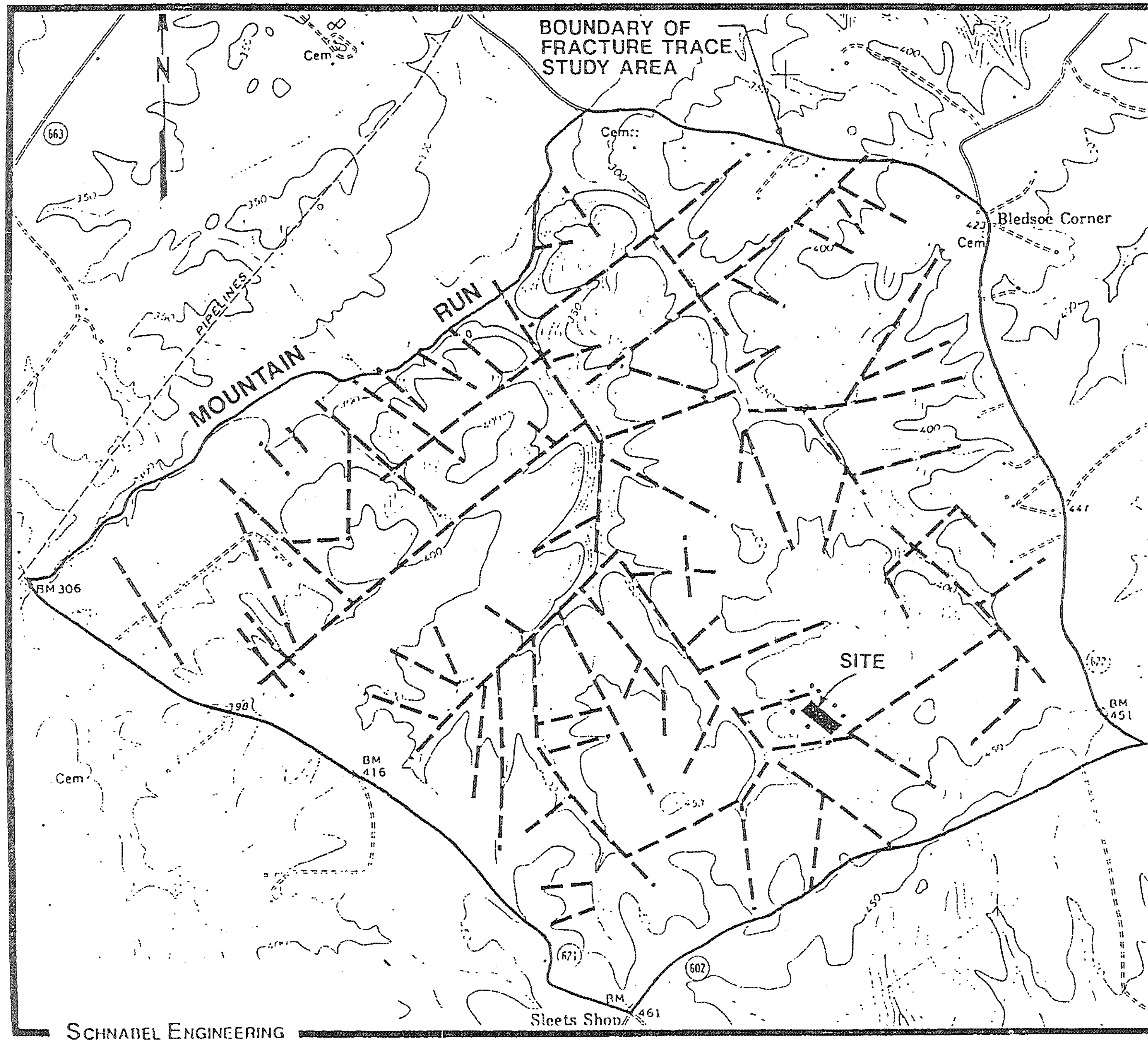
Both the falling head and rising head methods were used for all the monitoring and observation wells except at MW-1A and MW-1B, where the wells were screened in unsaturated zones. The rising head method was performed to check any discrepancy of the test results. Furthermore, some of these tests were repeated several times to verify the accuracy of the test data being collected.

4. SITE SPECIFIC HYDROGEOLOGY

4.1 FRACTURE TRACE ANALYSIS

A fracture trace analysis was performed to locate fracture trends, which are surficial expressions of potential underlying fractures or breaks in the bedrock. The fracture trace analysis was then used to help define potential monitoring well locations. This analysis utilized existing aerial photographs, topographic and geologic maps. A fracture trace is defined as a natural linear feature consisting of topographic alignments (including straight line stream segments) and vegetative or soil tonal alignments visible primarily on aerial photographs. Fracture trace analysis can be effectively used to study potential pathways for migration of leachates when complemented with an understanding of the local geology.

The fractures were mapped on a USGS topographic map (Unionville Quadrangle) for an area bounded to the southwest by State Route 621, to the southeast by State Route 602 and to the east and northeast by State Route 622. Mountain Run, a perennial creek, forms the study area boundary to the northwest. The site constitutes only a small portion of the fracture trace study area. Figure 3 presents the map showing general fracture trends along with the approximate site boundary. It should be noted, however, that the fracture trace analysis was difficult due to the densely wooded nature of the site at the time the aerial photographs were taken. Several prominent fracture trends were detected in the aerial photographs. These trends correspond with the drainageways which occur at the site. It is our



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0 2000 FT

(1 IN = 2000 FT)

USGS TOPOGRAPHIC MAP
UNIONVILLE QUADRANGLE

LEGEND

- MONITORING WELL
- TEST BURNING SITE
- FRACTURE TRACE

FIGURE 3
FRACTURE TRACE MAP

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opinion that these drainageways have developed along local fracture zones, which were less resistant to erosion than the adjacent, more competent rock.

The most prominent trend identified is the southwest to northeast trend which Mountain Run follows. This trend is generally very linear and extends for a considerable distance beyond the site and fracture trace study area. Many other fracture trends in the area parallel this (regional) trend. In the northwestern portion of the site, fracture trends follow approximately perpendicular to this regional trend. Drainageways and fractures in this portion of the study area follow a rectangular drainage pattern. Several trends in this portion of the site are expected to extend to adjacent drainage basins. The southeastern portion of the site does not display as distinct a rectangular drainage pattern as the northwestern portion. This may be due in part to a change in the geology or the intensity of fracturing of the underlying rock. Several trends appear to extend beyond the study area.

A fracture trace orientation summary, also called a Rose Diagram, is presented for the study area in Figure 4. This diagram can be used to obtain major orientations of the fractures in the site and study area. As can be seen from this figure, there are two major orientations or directions that the fractures tend to follow. One is the general trend from the northwest to the southeast while the other is the trend from the northeast to the southwest.

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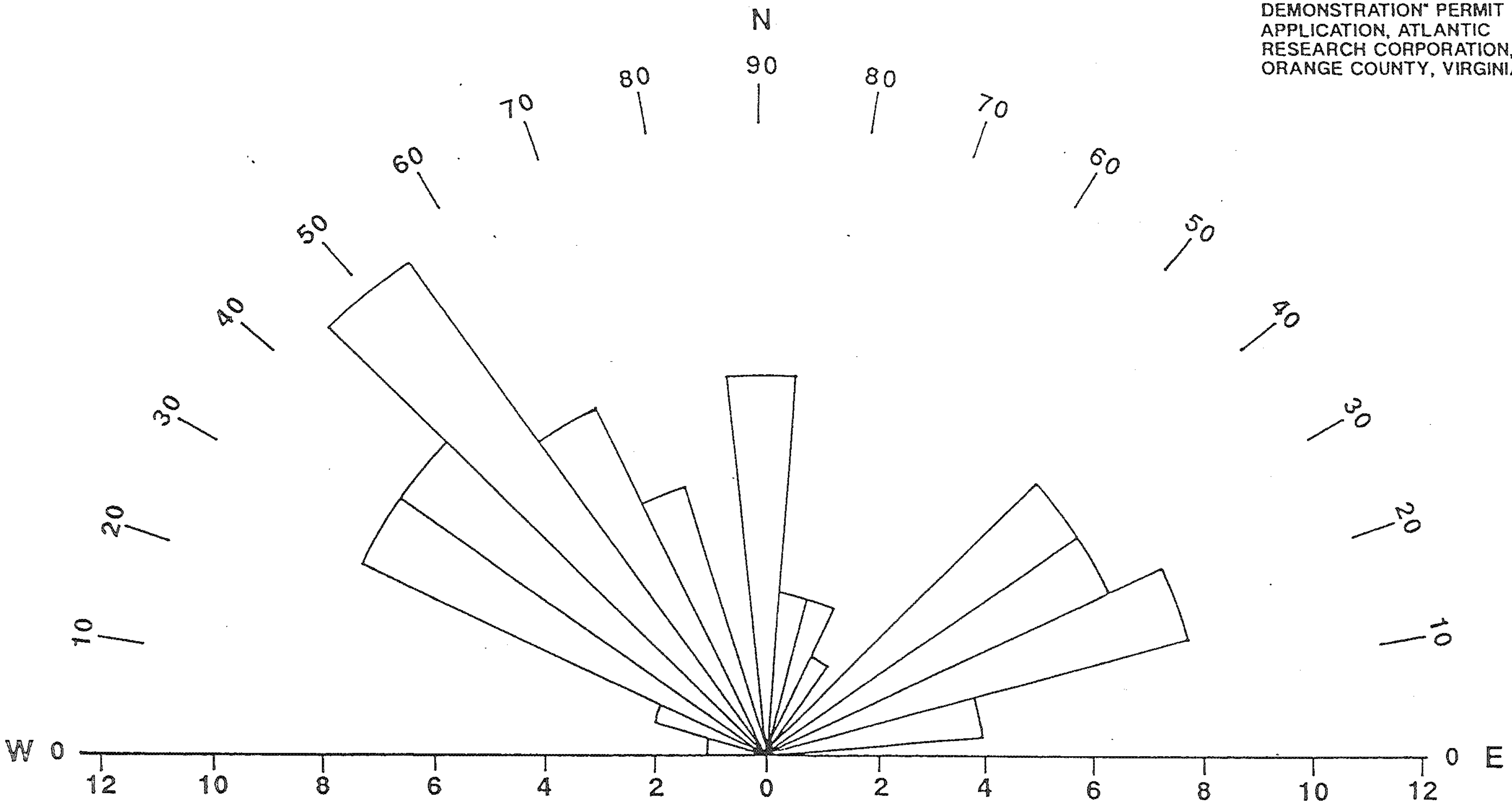

(NUMBER OF FRACTURE TRACES PER 10° SECTOR BASED UPON 88 FRACTURES)

FIGURE 4
FRACTURE TRACE ORIENTATION SUMMARY

DECEMBER, 1989

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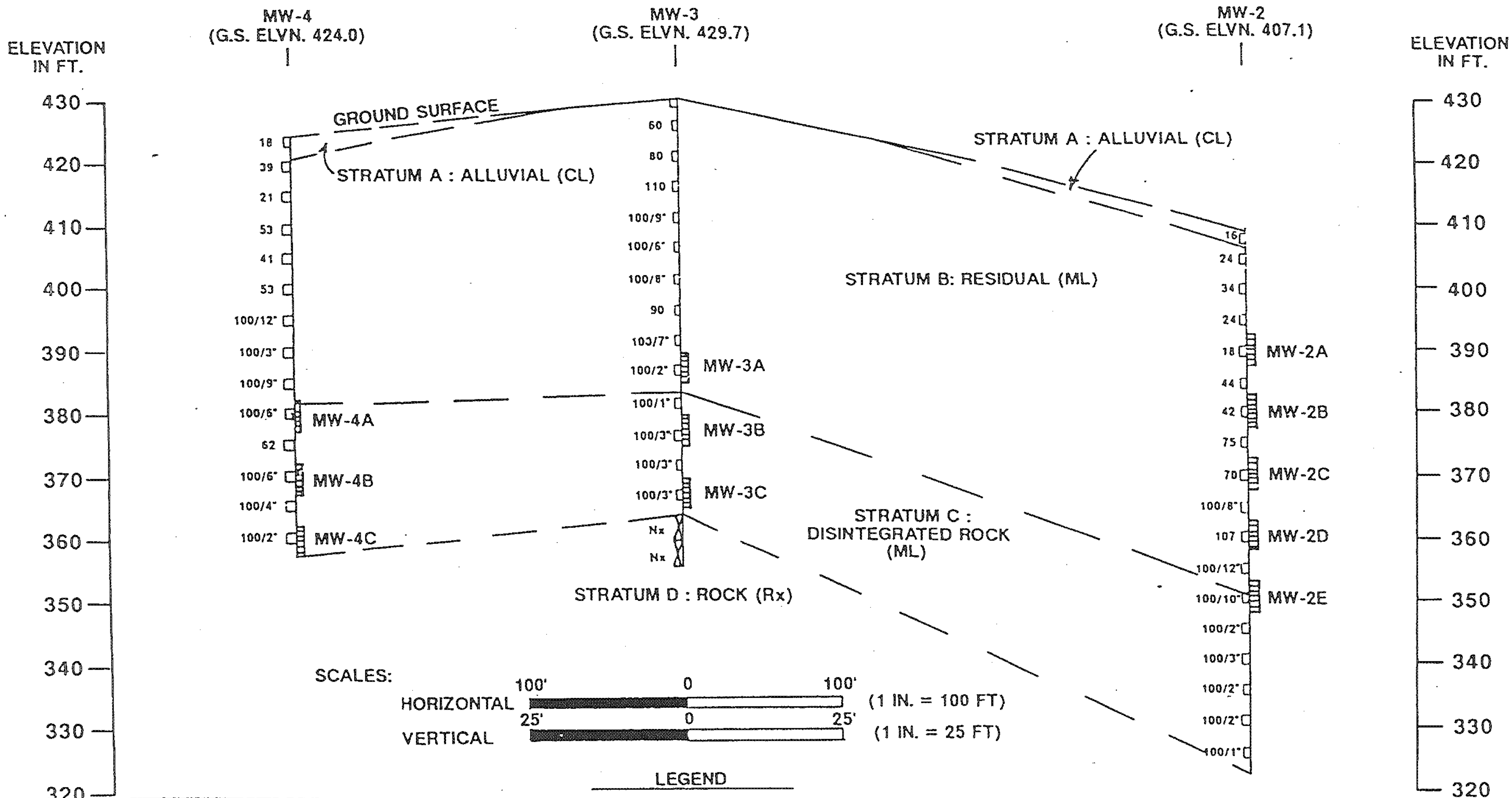
4.2 SUBSURFACE CONDITIONS AND LOCAL GEOLOGY

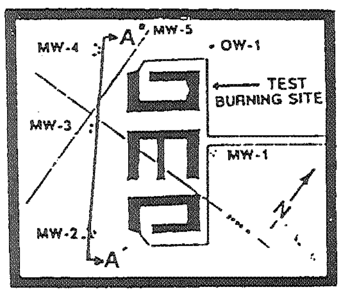
The subsurface conditions encountered at the site consist primarily of three strata. The subsurface profiles (cross sections) for the test burn site are presented on Figures 5 and 6. The location of these cross section are shown on Figure 2. The subsurface profiles were prepared based upon the subsurface data developed during this study. Review of the test boring data indicates the following generalized soil strata underlie the site to the depths investigated:

Stratum A: (Alluvial)	From ground surface to a depth of 0 to 3 ft	Fine to medium sandy LEAN CLAY (CL) to elastic SILT (MH) with sand; moist - red brown; (N = 14 to 18)
Stratum B: (Residual)	Below Stratum A (or from ground surface when Stratum A is absent) to a depth of 33 to 58 ft	Fine to medium sandy SILT (ML) to SILT (ML) with sand, contains mica and rock fragments; dry to wet - red brown, black, white and yellow; (N = 5 to 100/2")
Stratum C: (Disintegrated rock)	Below Stratum B to top of bedrock, a depth of 45 to 88 ft	Fine to coarse sandy SILT (ML) to SILT (ML) with sand, contains rock fragments and quartz veins; dry to wet - red, brown, green and gray; (N = 62 to 100/1")
Stratum D: (Bedrock)	Below Stratum C to a maximum depth investigated, 10 ft into bedrock	SCHIST, slightly weathered, medium to moderately hard, moderately fractured; dry - green (REC = 95 to 100%, RQD = 76 to 83%)

The above N values indicate the low and high Standard Penetration Test resistances encountered in a particular layer as determined from the number of blows required to drive a two inch O.D., 1-3/8 inch I.D. sampling spoon one foot using a 140 pound hammer falling

SUBSURFACE PROFILE ALONG A - A'





LEGEND

18 SPLIT SPOOL SAMPLE AND BLOW COUNTS

Nx ROCK CORE

WELL SCREEN LOCATION

FIGURE 5

NOTE:
LOCATION AND ELEVATION SURVEY FOR ALL WELLS WERE PERFORMED BY STEARNS L. COLEMAN, ORANGE, VIRGINIA.
PLEASE REFER TO THE TEXT AND APPENDIX A FOR DETAILS ON BLOW COUNTS, TEST BORING LOGS, WELL COMPLETION LOGS AND STRATUM DESCRIPTIONS. STRATIFICATION PRESENTED HERE ARE BASED ON INTERPOLATION BETWEEN LOCATIONS; ACTUAL GEOLOGICAL CONDITIONS MAY DIFFER BETWEEN INTERPOLATED LOCATIONS.

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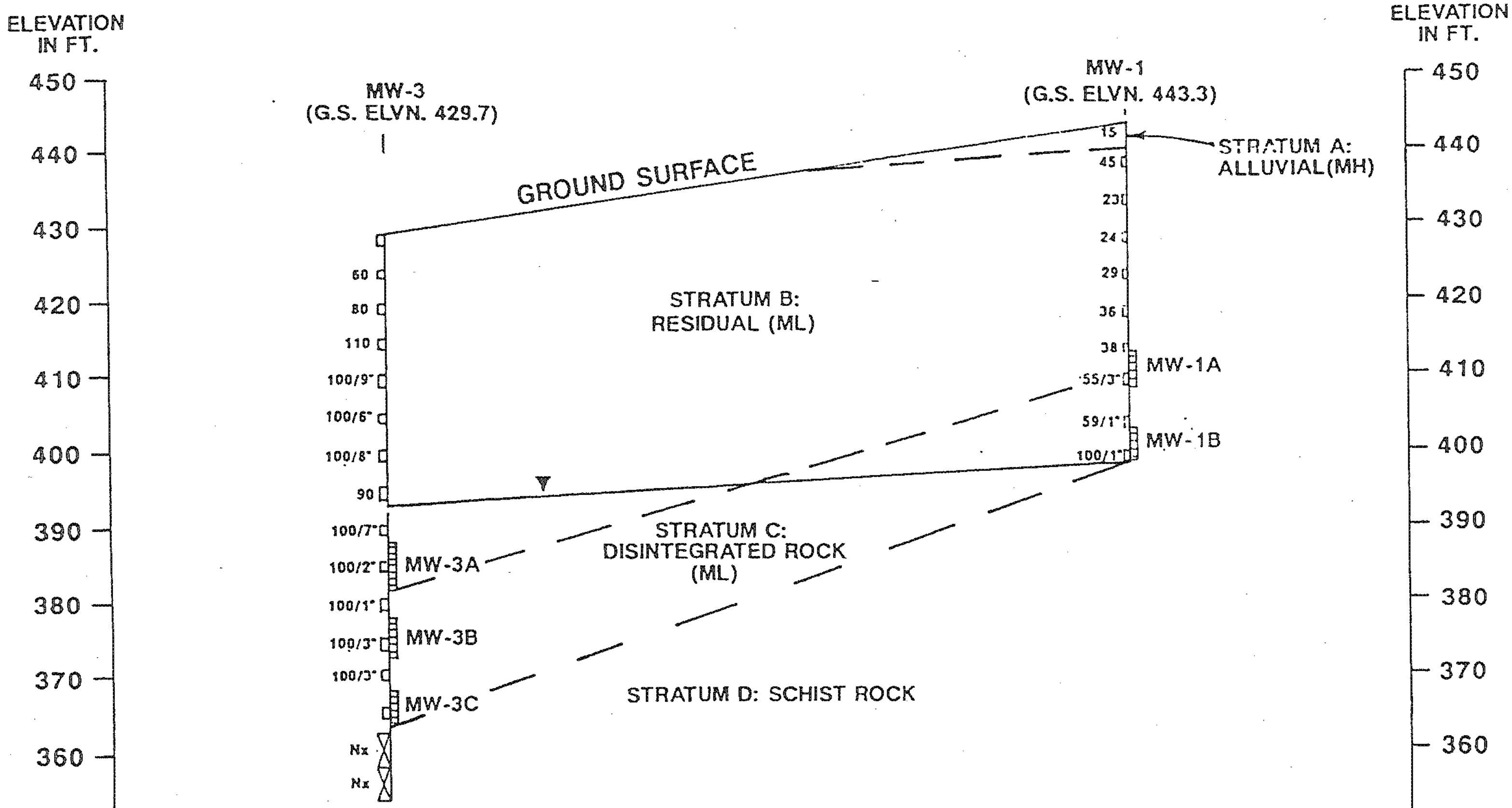
SUBSURFACE PROFILE ALONG B - B'



SCALES: HORIZONTAL 100' 0 100' (1 IN. = 100 FT)
VERTICAL 25' 0 25' (1 IN. = 25 FT)

LEGEND

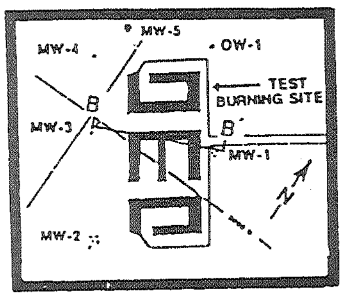
60 SPLIT SPOOL SAMPLE AND BLOW COUNTS

Nx ROCK CORE

WELL SCREEN LOCATION

FIGURE 6

NOTE:
LOCATION AND ELEVATION SURVEY FOR ALL WELLS WERE PERFORMED BY STEARNS L. COLEMAN, ORANGE, VIRGINIA.
PLEASE REFER TO THE TEXT AND APPENDIX A FOR DETAILS ON BLOW COUNTS, TEST BORING LOGS, WELL COMPLETION LOGS AND STRATUM DESCRIPTIONS. STRATIFICATION PRESENTED HERE ARE BASED ON INTERPOLATION BETWEEN LOCATIONS; ACTUAL GEOLOGICAL CONDITIONS MAY DIFFER BETWEEN INTERPOLATED LOCATIONS.



SCHNABEL ENGINEERING

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30 inches. This test is conducted in the test borings after seating the sampler six inches in the bottom of the hole according to ASTM D-1586.

Stratum A represents alluvial deposits which consist of fine to medium sandy lean clay south of the burn site and elastic silt with sand north of the burn site. Roots and rock fragments were found in this stratum. Stratum A is discontinuous over the site. This stratum was absent at Well Cluster MW-3 and MW-5.

Stratum B represents residual soils and is present throughout the site. It consists of silt with varying percentages of fine to medium sand and contains mica and rock fragments. Schistose characteristics (minute bedding and folding) were present indicating the gradational physical and chemical weathering of the schist bedrock in the area.

Stratum C is residual soils or disintegrated rock consisting primarily of fine grained materials with varying percentages of coarse particles. The stratum contained rock fragments and also a quartz vein. The primary difference between this stratum and Stratum B is the degree of weathering, with Stratum C indicating a significant presence of the parent rock structure and relic mineral bonds, resulting in a denser material (high blow counts). Slightly to moderately weathered schist was found in the split spoon soil samples. Residual soils, on the other hand, indicated completely to highly weathered parent rock. The stratum was fairly uniform across the site with the lateral differences being the varying degree of schistocity.

Stratum D is the bedrock underlying disintegrated rock of

Stratum C. The bedrock was cored at Well Cluster MW-3. The bedrock at the cored location consisted of a green schist, slightly weathered, medium to moderately hard, and moderately fractured. Because of the weathered schist characteristics found throughout Stratum C across the site, it is assumed that the schist is the predominant bedrock underlying the site. A contour map showing top of bedrock at the test burn site is shown on Figure 7. The bedrock forms a ridge at the center of the site and dips to the south and northwest. The gradient of the bedrock surface is steeper to the south. The bedrock is shallowest at MW-1 (El 398.3) and deepest at MW-2 (El 319.1)

4.3 GROUND WATER HYDROLOGY

Soil Thickness: An isopach map showing total thickness of overburden above the bedrock is given in Figure 8. The overburden includes both the alluvial and residual materials. The total overburden thickness represents both saturated and unsaturated soils and is shallowest at MW-1 (45 ft) where top of rock is highest and is greater than 85 ft at MW-2 where rock is deepest.

The unsaturated soil thickness varies from about seven feet at MW-2 to about 46.5 ft at OW-1. The saturated thickness varies from mere presence at MW-1, encountered during drilling, to about 81 ft at MW-2. The total saturated thickness at OW-1 is 16.3 ft, and at MW-3, MW-4, and MW-5 is 32.5, 31.5, and 9.5 ft respectively.

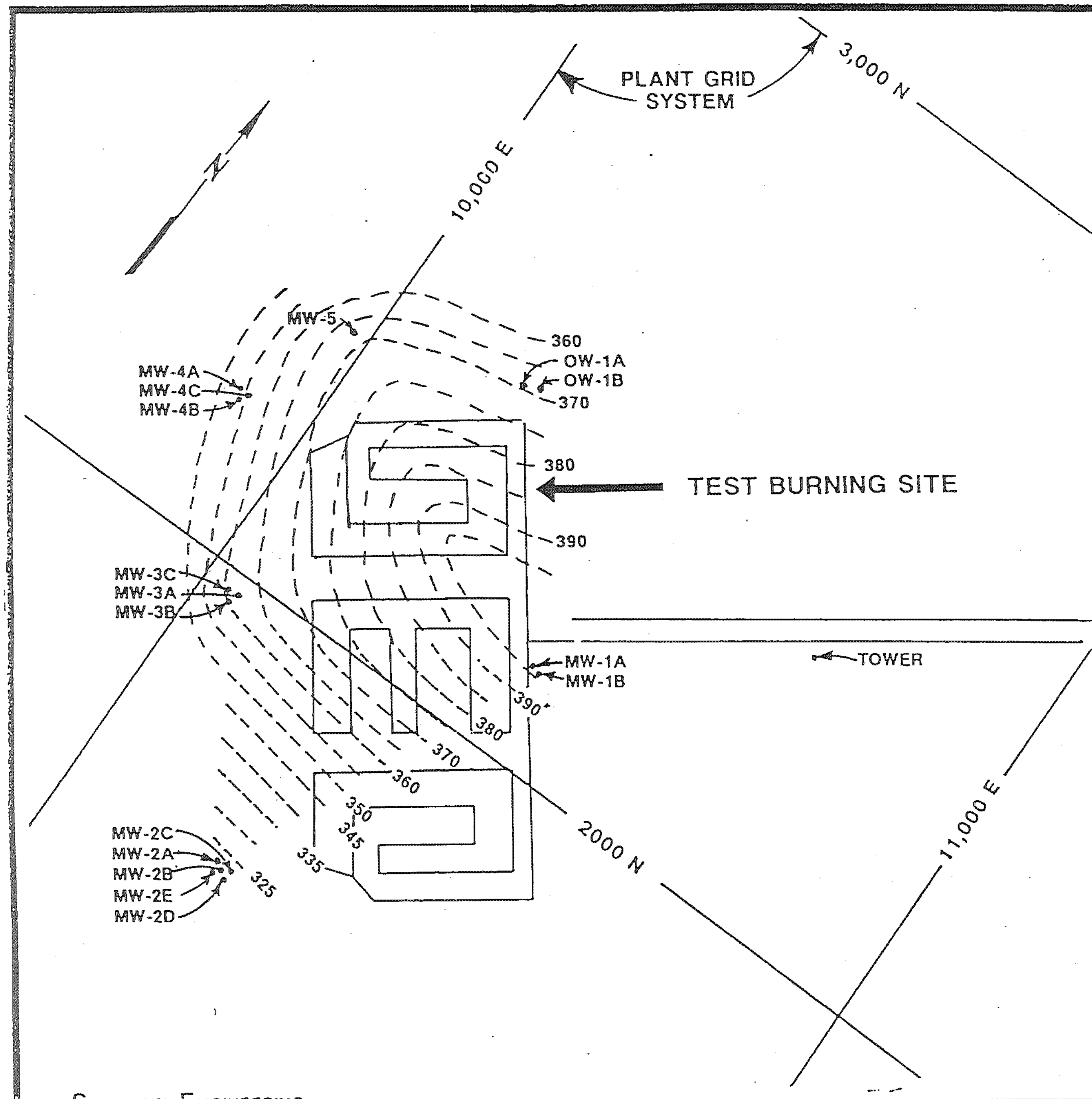

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FIGURE 7
TOP OF BEDROCK CONTOUR MAP

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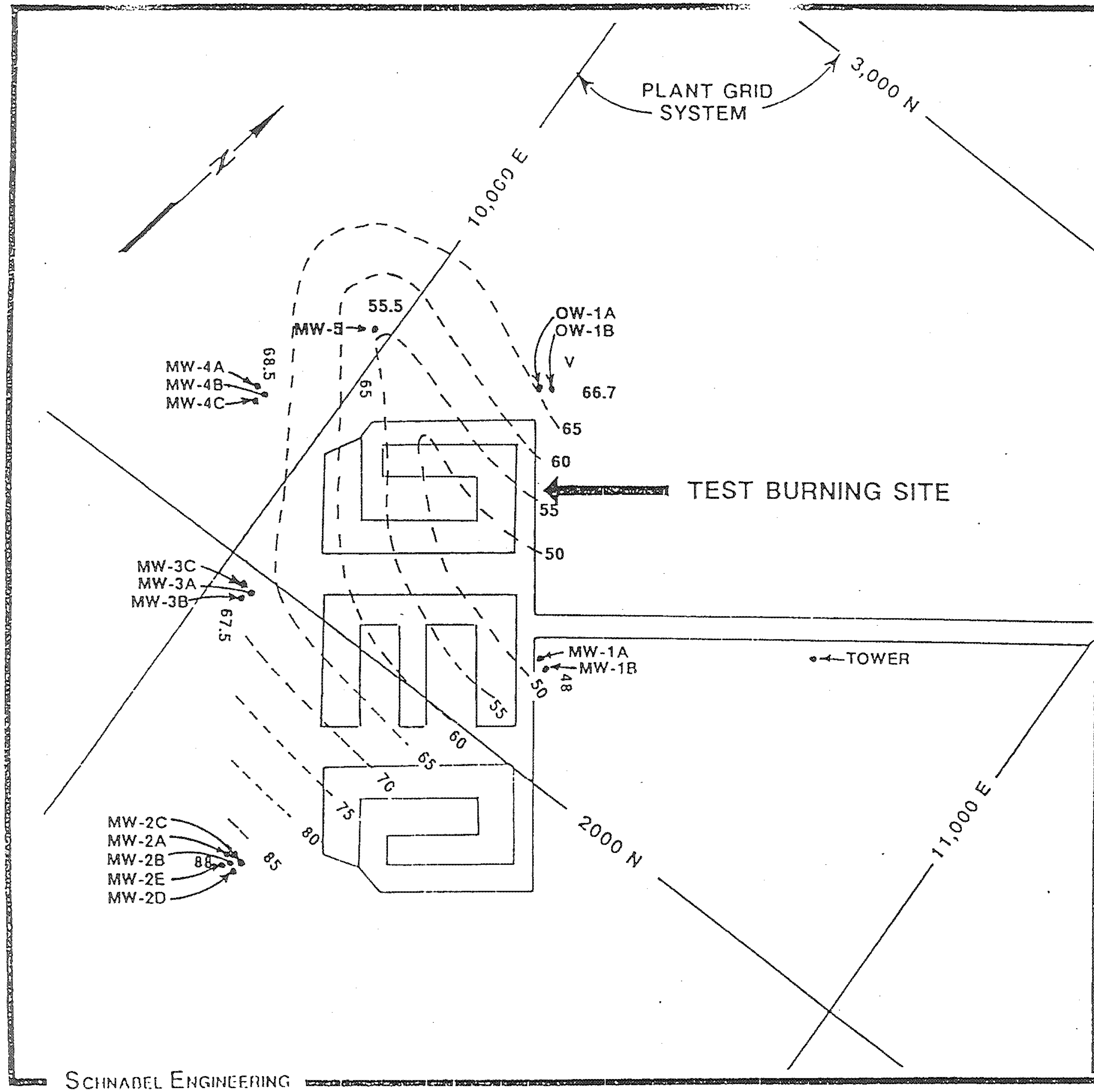

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SCALE:
0 200 FT.
(1 IN = 200 FT)

LEGEND

● MW MONITORING WELL
● OW OBSERVATION WELL
- - - - CONTOUR LINE

CONTOUR INTERVAL = 5'

FIGURE 8
ISOPACH MAP SHOWING SOIL THICKNESS ABOVE BEDROCK

DECEMBER, 1989

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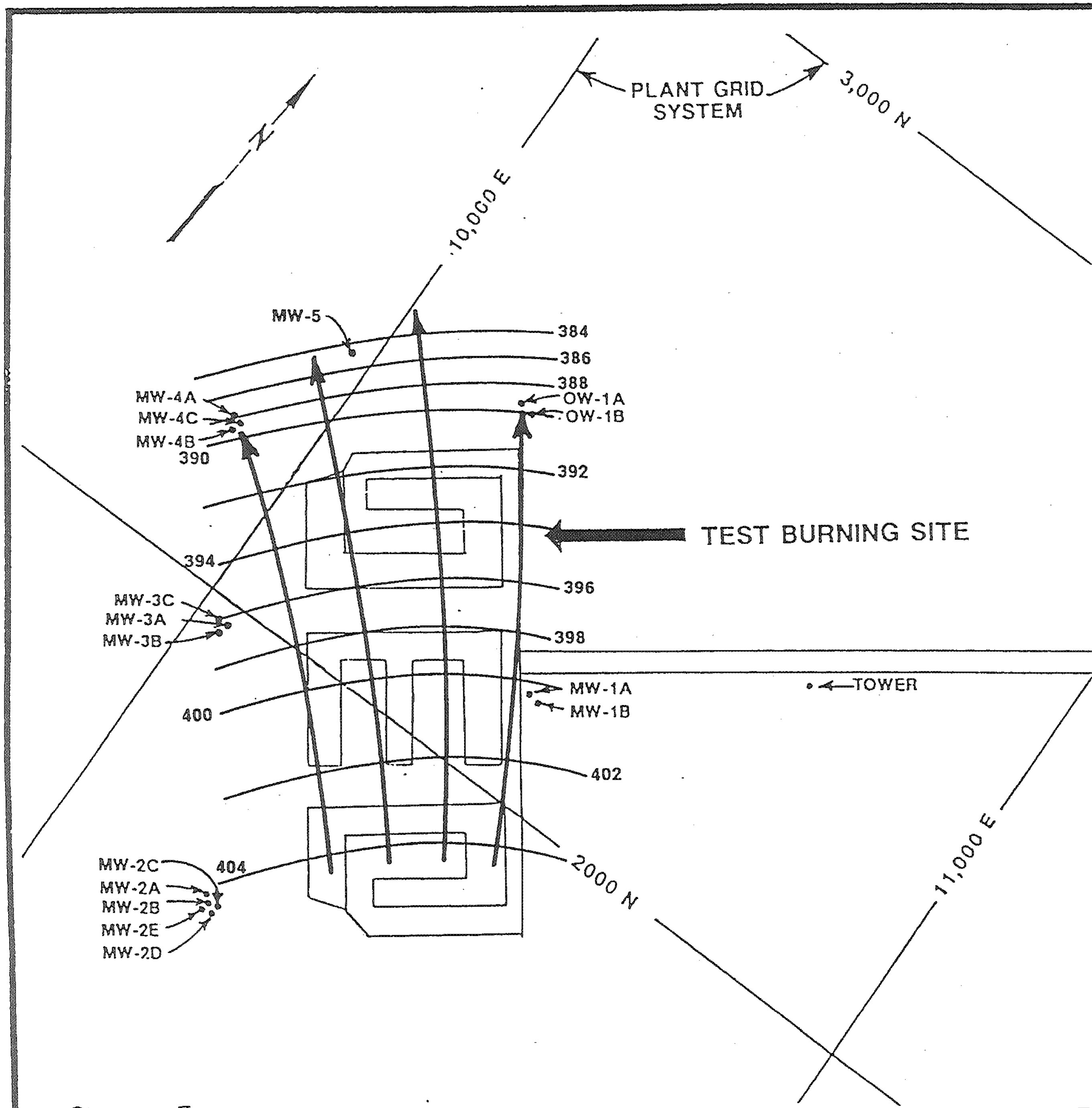
Ground Water Flow: Depth to ground water at the test burn site varies greatly from about seven feet at MW-2 to about 46.5 ft at OW-1. The general ground water elevation varies at the site from El 384.87 at MW-5 to El 404.50 at MW-2D. Ground water level readings made in January and October, 1989 at the burn site are summarized in Table 1. These data indicate that seasonal fluctuations during the study period varied from about 0.3 to 3.2 ft. A ground water contour map is shown on Figure 9 for the October readings. January readings were not contoured since there was no variation in flow direction between the two readings.

It should be noted that the Well MW-1A was dry at the time of the ground water table measurements. In developing the ground water contour map, the ground water elevation at MW-1B was used.

TABLE 1
SUMMARY OF WATER LEVEL DATA

Well No.	Top of Screen Elevation*	Ground Elevation*	TOC Elevation*	Date Measured	Depth to Water Below TOC*	Date Measured	Depth to Water Below TOC*	Ground Water Elevation
OW-1A	382.06	436.56	439.03	1-19-89	48.90	10-19-89	49.2	389.83
OW-1B	375.44	436.94	439.94	7-11-89	49.96	10-19-89	48.2	391.74
MW-1A	413.28	443.28	445.24	1-16-89	DRY	10-19-89	dry	-
MW-1B	403.29	443.29	445.27	1-16-89	DRY	10-19-89	43.98	401.29
MW-2A	390.85	407.85	410.76	1-16-89	9.40	10-19-89	6.28	404.48
MW-2B	380.55	407.55	410.23	1-16-89	9.00	10-19-89	5.77	404.46
MW-2C	370.36	407.36	410.49	1-17-89	9.30	10-19-89	6.03	404.46
MW-2D	360.24	407.24	409.58	1-17-89	8.30	10-19-89	5.08	404.50
MW-2E	350.14	407.14	410.17	1-16-89	9.10	10-19-89	5.99	404.18
3A	387.71	429.71	432.97	1-12-89	38.10	10-19-89	35.85	397.12
3B	377.81	429.81	431.81	1-12-89	36.90	10-19-89	34.80	397.01
MW-3C	367.70	429.70	432.94	1-12-89	39.00	10-19-89	37.08	395.86
MW-4A	380.78	423.78	426.08	1-10-89	39.40	10-19-89	38.20	387.88
MW-4B	371.49	424.49	426.65	1-10-89	40.40	10-19-89	37.35	389.30
MW-4C	360.97	423.97	426.42	1-17-89	40.40	10-19-89	39.08	387.34
MW-5	376.47	426.97	429.97	7-19-89	45.85	10-19-89	45.10	384.87

* All elevations and depths are expressed in feet;
TOC - Top of Casing (PVC well casing)



"RESEARCH, DEVELOPMENT AND DEMONSTRATION" PERMIT APPLICATION, ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY, VIRGINIA.

SCALE:
0 200 FT.
(1 IN = 200 FT)

LEGEND

- ● MW MONITORING WELL
- ● OW OBSERVATION WELL
- —— GROUND WATER CONTOUR
- - - - EXTRAPOLATED CONTOUR LINE
- → FLOW PATH

CONTOUR INTERVAL = 2'

N

FIGURE 9
GROUND WATER TABLE
CONTOUR MAP
(OCTOBER, 1989)

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SCHNABEL ENGINEERING

A review of Figure 9 indicates that the horizontal ground water flow gradient at the test site is northwesterly according to the ARC's grid system. Several flow lines indicating the direction of the ground water flow paths are shown on Figure 9. The flow gradient varies from about 0.022 on the eastern half of the site to about 0.037 on the western section of the test site.

The observed ground water data presented in Table 1 and Figure 9 indicate that well clusters at MW-4, MW-5 and OW-1 represent downgradient monitoring well locations, while the well cluster at MW-2 will represent an upgradient well. This deviates from the initial assumption considered in developing the technical proposal (which was approved by USEPA, Region III) dated August 22, 1988. In the technical proposal, OW-1 and MW-1 were considered to be upgradient wells, while MW-2 through MW-4 were considered to be downgradient locations. Based on water levels measured in the initial wells, well clusters MW-5 and OW-1 were established to meet the RCRA requirements, which calls for at least three monitoring wells downgradient of a RCRA facility. The contour map included herein reflects water level data obtained at all locations. The OW-1 location was upgraded to a monitoring well cluster by continuing the boring to bedrock and installing an additional well so as to screen the entire saturated thickness.

The aquifer at the test site is an unconfined aquifer with aquifer materials grading denser from top to bottom. The bedrock cored at MW-3 was found to be moderately fractured but dry. A review of individual well cluster data on Table 1 indicates a fairly low vertical flow gradient. This is due to the fact that the soil strata overlying the bedrock have good hydraulic communication and hydraulically behave as only one layer. Data also suggests that the vertical flow movement at MW-3 is less substantial.

In Situ Permeability: Hydraulic conductivity of the saturated soils at the test site were estimated using the Bouwer and Rice (1976) method. The estimated results are summarized in Table 2. A review of this table indicates the horizontal permeability of the soils in the test site are fairly uniform ranging from $4x10^{-5}$ to $1x10^{-3}$ cm/sec. The greatest permeabilities were observed at MW-2D and MW-2E, while the lowest permeabilities were observed at MW-3B and MW-4C. Based on the in situ permeability test results, the typical variation in the site permeability is expected to be between $1x10^{-4}$ and $6x10^{-4}$ cm/sec.

TABLE 2
PERMEABILITY VALUES

Well No.	Permeability in Cm/Sec
OW-1	$4X10^{-4}$
OW-1B	$2X10^{-4}$
MW-1A	DRY
MW-1B	DRY
MW-2A	$6X10^{-4}$
MW-2B	$7X10^{-4}$
MW-2C	$1X10^{-4}$
MW-2D	$9X10^{-4}$
MW-2E	$1x10^{-3}$
MW-3A	$5X10^{-4}$
MW-3B	$4X10^{-5}$
MW-3C	$2X10^{-4}$
MW-4A	$4X10^{-4}$
MW-4B	$4X10^{-4}$
MW-4C	$8X10^{-5}$
MW-5	$4X10^{-4}$

5. CONCLUSIONS AND RECOMMENDATIONS

A summary of the conclusions and recommendations, based on the information contained in this report, is presented as follows:

1. **Wells.** All wells were two inch I.D., Schedule 40 PVC, flush-joint wells and were completed two to three feet above ground with locking protective casing. A total of 16 monitoring wells in clusters of one to five wells were installed at the site.

2. **Stratigraphy.** The test site has approximately zero to three feet of alluvial soils underlain by 30 to 55 ft of residual soils and 12 to 30 ft of disintegrated rock. The schist bedrock underlying the disintegrated rock is slightly to moderately fractured. The top of the bedrock is expected to be about 45 to 88 ft below the ground surface.

3. **Ground Water Regime.** Based on the available data, all the strata above bedrock behave together as an unconfined (water table) aquifer with aquifer materials becoming denser from top to bottom. Significant vertical movement of ground water from one stratum to another is expected.

4. **Hydraulic Conductivity.** The range of hydraulic conductivities estimated from the slug tests is from 4×10^{-5} to 1×10^{-3} cm/sec. The representative hydraulic conductivity for the site soils is concluded to range from 1×10^{-4} to 6×10^{-4} cm/sec.

5. **Ground Water Flow Gradient.** The ground water at the site flows northwesterly according to the ARC's grid system. The flow gradient varies from about 0.022 on the eastern half of the site to about 0.037 on the western half.

6. **Recommendations.** RCRA requirements dictate that at least three monitoring wells should be located downgradient of a RCRA facility with at least one upgradient well. Based on the data contained herein, we recommend that wells MW-2, -4 and -5 and OW-1 be utilized to form the monitoring well network for the site. As agreed upon in the June 1st meeting with EPA Region III, monitoring well clusters at MW-4, MW-5 and OW-1 should be utilized for downgradient compliance monitoring, while well cluster MW-2 should be considered as the upgradient monitoring point. Future monitoring at well locations MW-1 and MW-3 is not considered necessary. However, water levels in these wells should be taken throughout the course of the monitoring program.

APPENDICES

APPENDIX A. TEST BORING LOGS
APPENDIX B. AS BUILT WELL CONSTRUCTION DETAILS

APPENDIX A

TEST BORING DATA

General Notes for Test Boring Logs
Identification of Soil
Test Boring Logs OW-1 and MW-1 thru -5
Grid Coordinates for Monitoring Wells

GENERAL NOTES FOR TEST BORING LOGS

1. NUMBERS IN "SAMPLE SPOON" COLUMN INDICATE BLOWS REQUIRED TO DRIVE A 2 INCH O.D., 1-3/8 INCH I.D. SAMPLING SPOON 6 INCHES USING A 140 POUND HAMMER FALLING 30 INCHES ACCORDING TO ASTM D-1586.

2. VISUAL CLASSIFICATION OF SOIL IS IN ACCORDANCE WITH TERMINOLOGY SET FORTH IN "IDENTIFICATION OF SOIL." THE UNIFIED SOIL CLASSIFICATION SYMBOLS SHOWN IN PARENTHESES ARE BASED ON VISUAL INSPECTION.

3. ESTIMATED GROUNDWATER LEVELS INDICATED BY ▼; THESE LEVELS ARE ONLY ESTIMATES FROM AVAILABLE DATA AND MAY VARY WITH PRECIPITATION, POROSITY OF THE SOIL, SITE TOPOGRAPHY, ETC.

4. REFUSAL AT THE SURFACE OF ROCK, BOULDER, OR OBSTRUCTION IS DEFINED AS A PENETRATION RESISTANCE OF 100 BLOWS FOR 2 INCHES PENETRATION OR LESS.

5. THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND AT THE PARTICULAR TIME WHEN DRILLED. SOIL CONDITIONS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE BORING LOCATIONS. ALSO, THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE SUBSURFACE SOIL AND GROUNDWATER CONDITIONS AT THESE BORING LOCATIONS.

6. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL AND ROCK TYPES AS DETERMINED FROM THE DRILLING AND SAMPLING OPERATION. SOME VARIATION MAY ALSO BE EXPECTED VERTICALLY BETWEEN SAMPLES TAKEN. THE SOIL PROFILE, WATER LEVEL OBSERVATIONS AND PENETRATION RESISTANCES PRESENTED ON THESE BORING LOGS HAVE BEEN MADE WITH REASONABLE CARE AND ACCURACY AND MUST BE CONSIDERED ONLY AN APPROXIMATE REPRESENTATION OF SUBSURFACE CONDITIONS TO BE ENCOUNTERED AT THE PARTICULAR LOCATION.

7. BORING LOG VERTICAL SCALE: 1/6 INCH = 1 FT.

8. TEST BORINGS DRILLED BY DVORAK GEOTECHNICAL SERVICES UNDER INSPECTION OF SCHNABEL ENGINEERING ASSOCIATES.

9. KEY TO SYMBOLS AND ABBREVIATIONS:

S	STANDARD PENETRATION TEST
2"	2" or 3" UNDISTURBED TUBE SAMPLE (RECOVERY SHOWN IN REMARKS COLUMN)
	PRESSUREMETER TEST
V	VANE SHEAR TEST
C	STATIC CONE PENETRATION TEST
2"	NX OR 2 INCH O.D. ROCK CORE RUN (RECOVERY SHOWN IN REMARKS COLUMN)

*,	NO SAMPLE RECOVERY
do,	DITTO
RQD,	ROCK QUALITY DESIGNATION
w,	NATURAL MOISTURE CONTENT

SCHNABEL ENGINEERING ASSOCIATES

Consulting Geotechnical Engineers

IDENTIFICATION OF SOIL

I. DEFINITION OF SOIL GROUP NAMES — ASTM D-2487-83

			Symbol	Group Name
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels — More than 50% of coarse fraction retained on No. 4 sieve Coarse, 3/4" to 3" Fine, No. 4 to 3/4"	Clean Gravels Less than 5% fines	GW	Well graded gravel
			GP	Poorly graded gravel
		Gravels with Fines More than 12% fines	GM	Silty gravel
			GC	Clayey gravel
	Sands — 50% or more of coarse fraction passes No. 4 sieve Coarse, No. 10 to No. 4 Medium, No. 40 to No 10 Fine, No. 200 to No. 40	Clean Sands Less than 5% fines	SW	Well-graded sand
			SP	Poorly graded sand
		Sands with Fines More than 12% fines	SM	Silty sand
			SC	Clayey sand
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays — Liquid Limit less than 50 Low to medium plasticity	Inorganic	CL	Lean clay
			ML	Silt
		Organic	OL	Organic clay
				Organic silt
	Silts and Clays — Liquid Limit 50 or more Medium to high plasticity	Inorganic	CH	Fat clay
			MH	Elastic silt
		Organic	OH	Organic clay
				Organic silt
Highly Organic Soils	Primarily organic matter, dark in color, and organic odor		PT	Peat

II. DEFINITION OF MINOR COMPONENT PROPORTIONS

Minor Component	Approximate Percentage of Fraction by Weight
Adjective Form	
Gravelly, Sandy	30% or more coarse grained
With	
Sand, Gravel	15% or more coarse grained
Silt, Clay	5% to 12% fine grained
Trace	
Sand, Gravel	Less than 15% coarse grained
Silt, Clay	Less than 5% fine grained

III. GLOSSARY OF MISCELLANEOUS TERMS

SYMBOLS — Unified Soil Classification Symbols are shown above as group symbols. Use A Line Chart for laboratory identification. Dual symbols are used for borderline classifications.

BOULDERS & COBBLES — Boulders are considered rounded pieces of rock larger than 12 inches, while cobbles range from 3 to 12 inch size.

DISINTEGRATED ROCK — Residual rock material with a standard penetration resistance (SPT) of more than 60 blows per foot, and less than refusal. Refusal is defined as a SPT of 100 blows for 2" or less penetration.

ROCK FRAGMENTS — Angular pieces of rock, distinguished from transported gravel, which have separated from original vein or strata and are present in a soil matrix.

QUARTZ — A hard silica mineral often found in residual soils

IRONITE — Iron oxide deposited within a soil layer forming cemented deposits

CEMENTED SAND — Usually localized rock-like deposits within a soil stratum composed of sand grains cemented by calcium carbonate or other materials.

MICA — A soft plate of silica mineral found in many rocks, and in residual or transported soil derived therefrom.

ORGANIC MATERIALS (Excluding Peat):
- Topsoil - Surface soils that support plant life and which contain considerable amounts of organic matter:
- Organic Matter - Soil containing organic colloids throughout its structure;
- Lignite - Hard, brittle decomposed organic matter with low fixed carbon content (a low grade of coal).

— Man made deposit containing soil, rock and often foreign matter.

PROBABLE FILL — Soils which contain no visually detected foreign matter but which are suspect with regard to origin

LENSES — 0 to 1/2 inch seam of minor soil component.

LAYERS — 1/2 to 12 inch seam of minor soil component.

POCKET — Discontinuous body of minor soil component

COLOR SHADES — Light to dark to indicate substantial difference in color.

MOISTURE CONDITIONS — Wet, moist, or dry to indicate visual appearance of specimen.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING ENGINEERS	TEST BORING LOG	BORING NO: OW-1

PROJECT: GROUNDWATER MONITORING, TEST BURN SITE, ORANGE COUNTY
CLIENT: ATLANTIC RESEARCH CORPORATION
BORING CONTRACTOR: DVORAK GEOTECHNICAL SERVICES DRILL: MOBILE B-56

SHEET NO:	1 OF 2
JOB NO:	V870477
ELEVATION:	(GS) 436.94
CASING SIZE:	3 1/4"
DATE START:	7/6/89
DATE FINISHED:	7/6/89
DRILLER:	T. HOUFF
INSPECTOR:	L. SYVERSON

WATER LEVEL DATA	DATE	TIME	DEPTH	CAVED
ENCOUNTERED	12/29	4:30	49.5	-
AFTER CASING PULLED				
___ HR. READING	WELL INSTALLED (SEE NOTE 1)			

DRIVE SAMPLER	
TYPE	S. S.
DIA.	2" O.D.
WT.	140#
FALL	30"

STRATUM	DEPTH FT.	ELEV. 437.00	BLOWS ON SAMPLE SPOON PER 6"	SYMBOL	IDENTIFICATION	REMARKS
A			2+4+10	S	ELASTIC SILT WITH SAND (MH) MOIST-RED BROWN	ALLUVIAL
	3.0					
B		430	18+20+35	S	FINE SANDY SILT (ML), MOIST-RED BROWN AND YELLOW	
			13+16+15	S		
		420	18+27+28	S		
			15+20+22	S		RESIDUAL
		410	18+42+67	S		
			13+23+30	S		
		400	28+36+44	S	do, FINE TO MEDIUM	
			41+15+19	S		
		390	30+34+64	S		
C	49.5		100/1"	S	FINE TO MEDIUM SANDY SILT (ML), MOIST- BROWN	SEE NOTE 2

ED_001691B_00019876

SCHNABEL ENGINEERING ASSOCIATES CONSULTING ENGINEERS	TEST BORING LOG	BORING NO: OW-1

PROJECT: GROUNDWATER MONITORING, TEST BURN SITE, ORANGE COUNTY
CLIENT: ATLANTIC RESEARCH CORPORATION
BORING CONTRACTOR: DVORAK GEOTECHNICAL SERVICES DRILL: MOBILE B-56

SHEET NO:	2 OF 2
JOB NO:	V870477
ELEVATION:	(GS) 436.94
CASING SIZE:	3 1/4"
DATE START:	7/6/89
DATE FINISHED:	7/6/89
DRILLER:	T. HOUFF
INSPECTOR:	L. SYVERSON

WATER LEVEL DATA	DATE	TIME	DEPTH	CAVED
ENCOUNTERED	12/29	4:30	49.5	-
AFTER CASING PULLED				
___ HR. READING	WELL INSTALLED (SEE NOTE 1)			

DRIVE SAMPLER	
TYPE	S.S.
DIA.	2" O.D.
WT.	140#
FALL	30"

STRATUM	DEPTH FT.	ELEV.	BLOWS ON SAMPLE SPOON, PER 6"	SYMBOL	IDENTIFICATION	REMARKS
					RED AND YELLOW	DISINTEGRATED ROCK
C			100/3"	S	do; GRAY AND BROWN	
		380				
			50+50/3"	S	do; FINE TO COARSE	
			100/0	S	NO RECOVERY	
	66.7				AUGER REFUSAL AT 66.7 FT	

NOTES:

1. COMPLETED AS OBSERVATION WELL OW-1B; WELL CONSTRUCTION DETAILS ARE GIVEN IN THE ATTACHED WELL LOG; WELL SCREEN IS SET AT 61.5 TO 66.5 FT.

2. GROUNDWATER ENCOUNTERED AT 49.5 FT

SCHNABEL ENGINEERING ASSOCIATES CONSULTING ENGINEERS	TEST BORING LOG	BORING NO: MW-1

PROJECT: GROUNDWATER MONITORING, TEST BURN SITE, ORANGE COUNTY
CLIENT: ATLANTIC RESEARCH CORPORATION
BORING CONTRACTOR: DVORAK GEOTECHNICAL SERVICES
DRILL: MOBILE B-56

SHEET NO: 1 OF 1		
JOB NO: V870477		
ELEVATION: (GS) 443.29		
CASING SIZE: 3 1/4"		
DATE START: 11/14/88		
DATE FINISHED: 11/15/88		
DRILLER: M. HUFF		
INSPECTOR: L. SYVERSON		

WATER LEVEL DATA	DATE	TIME	DEPTH	CAVED
ENCOUNTERED	11/15	9:15	43.0'	-
AFTER CASING PULLED				
__ HR. READING	WELL INSTALLED (SEE NOTE 1)			

DRIVE SAMPLER	
TYPE	S. S.
DIA.	2" O.D.
WT.	140#
FALL	30"

STRATUM	DEPTH FT.	ELEV. 443.3	BLOWS ON SAMPLE SPOON, PER 6"	SYMBOL	IDENTIFICATION	REMARKS
			WH+8+7	S	ELASTIC SILT WITH SAND (MH), CONTAINS ROOT FRAGMENTS, MOIST - RED BROWN	ALLUVIAL
A	3.0	440				
			11+21+24	S	FINE SANDY SILT (ML), DRY - RED BROWN	RESIDUAL (WEATHERED SCHIST CHARACTERISTICS)
			16+13+10	S	do, WITH SAND, MOIST	
		430				
			16+35+39	S	do, CONTAINS MICA	
			7+16+13	S		
B		420				
			8+12+24	S	do, RED, YELLOW, AND WHITE	
			16+18+20	S		
		410				DISINTEGRATED ROCK
			45+55/3"	S	do, BROWN AND WHITE (QUARTZ VEIN PRESENT)	
C						
			41+59/1"	S	do, CONTAINS ROCK FRAGMENTS, DRY-BROWN, TAN	SEE NOTE 2
		400				
	45.0		100/1"	S	do, WET	
					AUGER REFUSAL AT 45 FT	
					NOTES:	
					COMPLETED AS MONITORING WELL MW-1 B	

SCHNABEL ENGINEERING ASSOCIATES CONSULTING ENGINEERS	TEST BORING LOG	BORING NO: MW-2

PROJECT: GROUNDWATER MONITORING, TEST BURN SITE, ORANGE COUNTY
CLIENT: ATLANTIC RESEARCH CORPORATION
BORING CONTRACTOR: DVORAK GEOTECHNICAL SERVICES
DRILL: MOBILE B-56

SHEET NO:	1 OF 2
JOB NO:	V870477
ELEVATION:	(GS) 407.14
CASING SIZE:	3 1/4"
DATE START:	11/21/88
DATE FINISHED:	11/22/88
DRILLER:	DENNIS HARRIS
INSPECTOR:	L. SYVERSON

WATER LEVEL DATA	DATE	TIME	DEPTH	CAVED
ENCOUNTERED	11/21	-	17.0'	-
AFTER CASING PULLED				
__ HR. READING	WELL INSTALLED (SEE NOTE 1)			

DRIVE SAMPLER	
TYPE	S. S.
DIA.	2" O.D.
WT.	140#
FALL	30"

STRATUM	DEPTH FT.	ELEV. 407.1	BLOWS ON SAMPLE SPOON, PER 6"	SYMBOL	IDENTIFICATION	REMARKS
A			+3+13	S	FINE SANDY LEAN CLAY (CL), MOIST - RED BROWN	ALLUVIAL
	3.0					
		400	9+10+14	S	FINE TO MEDIUM SANDY SILT (ML), MOIST - BROWN AND RED	RESIDUAL (WEATHERED SCHIST CHARACTERISTICS)
			12+16+18	S	do, FINE - BROWN RED	MOTTLED APPEARANCE DUE TO SCHISTOCITY
	17.0	390	7+8+16	S		SEE NOTE 2
B			3+10+8	S	do, BROWN, RED AND BLACK	SEE NOTE 3
		380	6+18+26	S	do, BROWN, RED	
			4+15+27	S	do, BROWN, RED AND BLACK	
		370	20+30+45	S	do, BROWN	
			11+25+45	S		
		360	15+45+55/2"	S		

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SCHNABEL ENGINEERING ASSOCIATES CONSULTING ENGINEERS	TEST BORING LOG	BORING NO: MW-2

PROJECT: GROUNDWATER MONITORING, TEST BURN SITE, ORANGE COUNTY | SHEET NO: 2 OF 2
CLIENT: ATLANTIC RESEARCH CORPORATION | JOB NO: V870477
BORING CONTRACTOR: DVORAK GEOTECHNICAL SERVICES | DRILL: MOBILE B-56 | ELEVATION: (GS) 407.14

WATER LEVEL DATA	DATE	TIME	DEPTH	CAVED	DRIVE SAMPLER		
					TYPE	S. S.	CASING SIZE: 3 1/4"
ENCOUNTERED	11/21		17.0'	-	DIA.	2" O.D.	DATE START: 11/21/88
AFTER CASING PULLED					WT.	140#	DATE FINISHED: 11/22/88
__ HR. READING	WELL INSTALLED (SEE NOTE 1)				FALL	30"	DRILLER: DENNIS HARRIS
							INSPECTOR: L. SYVERSON

STRATUM	DEPTH FT.	ELEV.	BLOWS ON SAMPLE SPOON PER 6"	SYMBOL	IDENTIFICATION	REMARKS
B			14+27+80	S	FINE SANDY SILT (ML) MOIST, - BROWN AND BLACK	RESIDUAL
	55.0		30+70/6"	S		
		350				
C			30+70/4"	S	FINE TO MEDIUM SANDY SILT (ML), MOIST - BROWN	DISINTEGRATED ROCK
			100/2"	S	do, BROWN	
		340				
			100/3"	S		
			100/2"	S	do, CONTAINS ROCK FRAGMENTS	
		330				
			100/2"	S		
			100/1"	S		
		320				
	88.0				AUGER REFUSAL AT 88 FT	

NOTES:
1. COMPLETED AS MONITORING WELL MW-2E; WELL CONSTRUCTION DETAILS ARE GIVEN IN THE ATTACHED WELL LOG; WELL SCREEN IS SET AT 57 TO 62 FT.
2. GROUNDWATER ENCOUNTERED AT 17 FT.
3. MOIST AND LAYERED SOILS OF RED, BROWN AND BLACK; EACH LAYER IS ABOUT 2 TO 6" THICK

SCHNABEL ENGINEERING ASSOCIATES
CONSULTING ENGINEERS

TEST BORING LOG

BORING NO: MW-3

PROJECT: GROUNDWATER MONITORING, TEST BURN SITE, ORANGE COUNTY
CLIENT: ATLANTIC RESEARCH CORPORATION
CONTRACTOR: DVORAK TECHNICAL SERVICES   DRILL: MOBILE B-56

SHEET NO: 1 OF 2
JOB NO: V870477
ELEVATION: (GS) 429.7
CASING SIZE: 3 1/4"
DATE START: 12/19/88
DATE FINISHED: 12/21/88
DRILLER: T. HOUFF
INSPECTOR: L. SYVERSON

WATER LEVEL DATA	DATE	TIME	DEPTH	CAVED
ENCOUNTERED	12/19	1:15	39.5	-
AFTER CASING PULLED				
___ HR. READING	WELL INSTALLED (SEE NOTE 1)			

DRIVE SAMPLER	
TYPE	S.S.
DIA.	2" O.D.
WT.	140#
FALL	30"

STRATUM	DEPTH FT.	ELEV. 429.7	BLOWS ON SAMPLE SPOON PER 6"	SYMBOL	IDENTIFICATION	REMARKS
				S	SILT WITH SAND (ML), MOIST - RED BROWN	
			20+32+28	S		
		420	22+42+38	S	do, DRY	
			21+45+65	S	do, YELLOW BROWN	
B		410	28+56+ 44/3"	S	do, FINE TO MEDIUM SANDY - BROWN RED	RESIDUAL
			100/6"	S	do, CONTAINS ROCK FRAGMENTS, DRY	
		400	38+62/2"	S		
			16+30+60	S	do, MOIST	
		390	24+60+40/ 1"	S	do, YELLOW, RED, BROWN, BLACK	SEE NOTE 2
	44.5		100/2"	S	do, WET	
C		380	100/1"	S	do MOIST - GREEN GRAY	DISINTEGRATED ROCK

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SCHNABEL ENGINEERING ASSOCIATES CONSULTING ENGINEERS	TEST BORING LOG	BORING NO: MW-3

PROJECT: GROUNDWATER MONITORING, TEST BURN SITE, ORANGE COUNTY
CLIENT: ATLANTIC RESEARCH CORPORATION
BORING CONTRACTOR: DVORAK GEOTECHNICAL SERVICES
DRILL: MOBILE B-56

SHEET NO: 2 OF 2
JOB NO: V870477
ELEVATION: (GS) 429.7
CASING SIZE: 3 1/4"
DATE START: 12/19/88
DATE FINISHED: 12/19/88
DRILLER: T. HOUFF
INSPECTOR: L. SYVERSON

WATER LEVEL DATA	DATE	TIME	DEPTH	CAVED
ENCOUNTERED	12/19	1:15	39.5	-
AFTER CASING PULLED	SEE ATTACHED LOG			
___ HR. READING				

DRIVE SAMPLER	
TYPE	S.S.
DIA.	2" O.D.
WT.	140#
FALL	30"

STRATUM	DEPTH FT.	ELEV.	BLOWS ON SAMPLE SPOON, PER 6"	SYMBOL	IDENTIFICATION	REMARKS
						DISINTEGRATED ROCK
C			100/3"	S	FINE TO MEDIUM SANDY SILT (ML), CONTAINS ROCK FRAGMENTS, MOIST - GRAY GREEN	
		370	100/3"	S		
			100/3"	S		
	67.5					
			REC= 95%	NX	SLIGHTLY WEATHERED, GREEN SCHIST, MEDIUM TO MODERATELY HARD, MODERATELY FRACTURED (70°-80° FROM CORE AXIS)	ROCK
		360	RQD= 76%			
D	72.5					
			REC=100%	NX		
			RQD= 83%			
	77.5					

CORING TERMINATED AT 77.5 FT

NOTES:

1. COMPLETED AS MONITORING WELL MW-3C; WELL CONSTRUCTION DETAILS ARE GIVEN IN THE ATTACHED WELL LOG; WELL SCREEN IS SET AT 62 TO 67 FT.

2. GROUNDWATER ENCOUNTERED AT 39.5 FT.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING ENGINEERS	TEST BORING LOG	BORING NO: MW-4

PROJECT: GROUNDWATER MONITORING, TEST BURN SITE, ORANGE COUNTY
CLIENT: ATLANTIC RESEARCH CORPORATION
BORING CONTRACTOR: DVORAK GEOTECHNICAL SERVICES DRILL: MOBILE B-56

SHEET NO: 1 OF 2
JOB NO: V870477
ELEVATION: (GS) 423.97
CASING SIZE: 3 1/4"
DATE START: 11/15/88
DATE FINISHED: 11/16/88
DRILLER: T. HUFF
INSPECTOR: L. SYVERSON

WATER LEVEL DATA	DATE	TIME	DEPTH	CAVED
ENCOUNTERED	11/15	11:20	38'	-
AFTER CASING PULLED				
__ HR. READING	WELL INSTALLED (SEE NOTE 1)			

DRIVE SAMPLER	
TYPE	S. S.
DIA.	2" O.D.
WT.	140#
FALL	30"

STRATUM	DEPTH FT.	ELEV. 424.0	BLOWS ON SAMPLE SPOON, PER 6"	SYMBOL	IDENTIFICATION	REMARKS
A			3+7+11	S	FINE TO MEDIUM SANDY LEAN CLAY (CL), MOIST-RED BROWN	ALLUVIAL
	3.0	420				
B			22+16+23	S	FINE TO MEDIUM SANDY SILT (ML) MOIST - BROWN RED	RESIDUAL
			8+11+10	S		
		410				
			16+22+31	S		
			22+20+21	S	do, CONTAINS ROCK FRAGMENTS	
		400				
			24+27+26	S		
			34+66/6"	S		
		390				
			100/3"	S		
			22+66+34/3"	S		
		380				
C	45.0		100/6"	S	FINE TO MEDIUM SANDY SILT (ML), MOIST - RED BROWN	DISINTEGRATED ROCK

SCHNABEL ENGINEERING ASSOCIATES CONSULTING ENGINEERS	TEST BORING LOG	BORING NO: MW-4

PROJECT: GROUNDWATER MONITORING, TEST BURN SITE, ORANGE SITE
CLIENT: ATLANTIC RESEARCH CORPORATION
BORING CONTRACTOR: DVORAK GEOTECHNIAL SERVICES
DRILL: MOBILE B-56

SHEET NO:	2 OF 2
JOB NO:	V870477
ELEVATION:	(GS) 423.97
CASING SIZE:	3 1/4"
DATE START:	11/15/88
DATE FINISHED:	11/16/88
DRILLER:	T. HUFF
INSPECTOR:	L. SYVERSON

WATER LEVEL DATA

	DATE	TIME	DEPTH	CAVED
ENCOUNTERED	11/15	11:20	38'	-
AFTER CASING PULLED				
___ HR. READING				

DRIVE SAMPLER

TYPE	S. S.
DIA.	2" O.D.
WT.	140#
FALL	30"

STRATUM	DEPTH FT.	ELEV.	BLOWS ON SAMPLE SPOON PER 6"	SYMBOL	IDENTIFICATION	REMARKS
C			14+28+34	S	FINE TO MEDIUM SANDY SILT (ML), MOIST - RED BROWN	DISINTEGRATED ROCK
		370				
			100/6"	S		
			100/4"	S	do, WET, GRAY BROWN	
		360				
			100/2"	S	do, GREEN GRAY	
	68.5					
					AUGER REFUSAL AT 68.5 FT	

NOTES:

1. COMPLETED AS MONITORING WELL MW-4C; WELL CONSTRUCTION DETAILS ARE GIVEN IN THE ATTACHED WELL LOG; WELL SCREEN IS SET AT 63 TO 68 FT.

2. GROUND WATER ENCOUNTERED AT 38 FT

SCHNABEL ENGINEERING ASSOCIATES CONSULTING ENGINEERS	TEST BORING LOG	BORING NO: MW-5

PROJECT: GROUND WATER MONITORING, TEST BURN SITE, ORANGE COUNTY
CLIENT: ATLANTIC RESEARCH CORPORATION
BORING CONTRACTOR: DVORAK GEOTECHNICAL SERVICES
DRILL: MOBILE B-56

SHEET NO:	1 OF 2	
JOB NO:	V870477	
ELEVATION:	426.97	
CASING SIZE:	3-1/4	
DATE START:	7/6/89	
DATE FINISHED:	7/6/89	
DRILLER:	T. HOUFF	
INSPECTOR:	L. SYVERSON	

WATER LEVEL DATA	DATE	TIME	DEPTH	CAVED
ENCOUNTERED	7/6	4:15 P	53.5'	-
AFTER CASING PULLED				
___ HR. READING	WELL INSTALLED (SEE NOTE 1)			

DRIVE SAMPLER	
TYPE	S.S.
DIA.	2" O.D.
WT.	140#
FALL	30"

STRATUM	DEPTH FT.	ELEV.	BLOWS ON SAMPLE SPOON PER 6"	SYMBOL	IDENTIFICATION	REMARKS
		427				
A			2+2+3+	S	ELASTIC SILT WITH SAND (MH), CONTAINS ROCK FRAGMENTS, MOIST - RED BROWN	ALLUVIAL
	3.0					
			13+20+37	S		
		420				
	8.0					
B			11+14+27	S	FINE SANDY SILT (ML), CONTAINS ROCK FRAGMENTS, MOIST - BROWN AND RED	RESIDUAL
			9+16+13	S		
		410				
			62+38/3"	S	do, DRY	
			45+50+27	S		
		400				
			7+9+25	S	do, MOIST	
			15+39+49	S		
		390				
			60+40/1"	S		
			42+36+74	S		
		380				
	48.0					DISINTEGRATED ROCK
C			100/3"	S	FINE SANDY SILT (ML) - GRAY, BROWN	

SCHNABEL ENGINEERING ASSOCIATES CONSULTING ENGINEERS	TEST BORING LOG	BORING NO: MW-5

PROJECT: GROUND WATER MONITORING, TEST BURN SITE, ORANGE COUNTY	SHEET NO.: 2 OF 2
CLIENT: ATLANTIC RESEARCH CORPORATION	JOB NO: V870477
BORING CONTRACTOR: DVORAK GEOTECHNICAL SERVICES DRILL: MOBILE B-56	ELEVATION: 426.97

WATER LEVEL DATA	DATE	TIME	DEPTH	CAVED	DRIVE SAMPLER		
					TYPE	S. S.	CASING SIZE: 3-1/4
ENCOUNTERED	7/6	4:15 P	53.5'	-	DIA.	2" O.D.	DATE START: 7/6/89
AFTER CASING PULLED					WT.	140#	DATE FINISHED: 7/6/89
___ HR. READING	WELL INSTALLED (SEE NOTE 1)				FALL	30"	DRILLER: T. HOUFF
							INSPECTOR: L. SYVERSON

STRATUM	DEPTH FT.	ELEV.	BLOWS ON SAMPLE SPOON, PER 6"	SYMBOL	IDENTIFICATION	REMARKS
C					FINE SANDY SILT	DISINTEGRATED ROCK
	55.5		100/2"	Sr	do, CONTAINS ROCK FRAGMENTS	
					AUGER REFUSAL AT 55.5 FT	

NOTES:

1. COMPLETED AS MONITORING WELL MW - 5; WELL CONSTRUCTION DETAILS ARE GIVEN IN THE ATTACHED WELL LOG; WELL SCREEN IS SET AT 50.5 TO 55.5 FT.

2. GROUND WATER ENCOUNTERED AT 53.5 FT.

SUMMARY OF GRID COORDINATES
FOR MONITORING WELLS

Well No.	*ARC's GRID COORDINATES**	
	North Coordinate	East Coordinate
OW-1A	N2,429.2143	E10,218.7874
OW-1B	N2,426.4113	E10,219.9868
MW-1A	N2,136.0423	E10,419.8086
MW-1B	N2,136.1278	E10,430.7559
MW-2A	N1,678.7412	E10,233.3651
MW-2B	N1,676.1134	E10,236.8157
MW-2C	N1,678.0698	E10,239.5403
MW-2D	N1,673.7956	E10,239.4878
MW-2E	N1,672.4063	E10,234.1801
MW-3A	N1,973.3199	E10,046.0404
MW-3B	N1,966.3021	E10,042.4570
MW-3C	N1,971.4982	E10,041.9509
MW-4A	N2,190.2350	E9,905.5556
MW-4B	N2,184.8742	E9,908.3826
MW-4C	N2,188.5868	E9,908.1966
MW-5	N2,387.6909	E9,969.2766

* ARC - Atlantic Research Corporation

** All coordinates have been provided by Stearns L. Coleman, Proffessional Land Surveyor, Orange, Virginia after conducting survey at the site.

APPENDIX B

WELL CONSTRUCTION DATA

Grid Coordinates for Monitoring Wells
Well Development Record
As Built Well Construction Details (16)

SUMMARY OF GRID COORDINATES
FOR MONITORING WELLS

Well No.	*ARC's GRID COORDINATES**	
	North Coordinate	East Coordinate
OW-1A	N2,429.2143	E10,218.7874
OW-1B	N2,426.4113	E10,219.9868
MW-1A	N2,136.0423	E10,419.8086
MW-1B	N2,136.1278	E10,430.7559
MW-2A	N1,678.7412	E10,233.3651
MW-2B	N1,676.1134	E10,236.8157
MW-2C	N1,678.0698	E10,239.5403
MW-2D	N1,673.7956	E10,239.4878
MW-2E	N1,672.4063	E10,234.1801
MW-3A	N1,973.3199	E10,046.0404
MW-3B	N1,966.3021	E10,042.4570
MW-3C	N1,971.4982	E10,041.9509
MW-4A	N2,190.2350	E9,905.5556
MW-4B	N2,184.8742	E9,908.3826
MW-4C	N2,188.5868	E9,908.1966
MW-5	N2,387.6909	E9,969.2766

* ARC - Atlantic Research Corporation
** All coordinates have been provided by Stearns L. Coleman, Proffessional Land Surveyor, Orange, Virginia after conducting survey at the site.

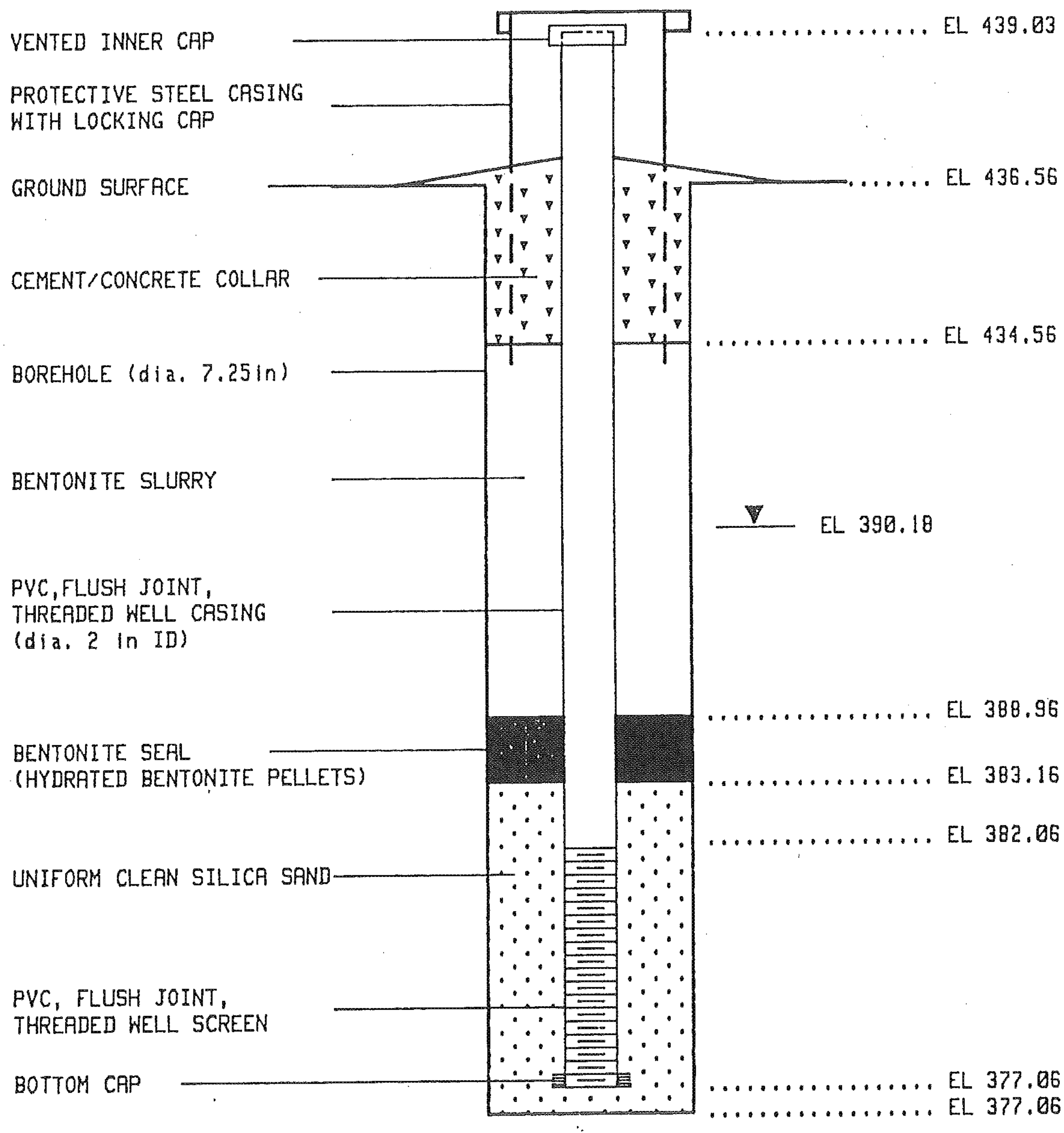
WELL DEVELOPMENT RECORD

Well No.	No. of Bailers of Water Removed for Completion of Well Development
OW-1	35
OW-1B	55
MW-1A	DRY
MW-1B	6 (WENT DRY)
MW-2A	32
MW-2B	47
MW-2C	42
MW-2D	85
MW-2E	110
MW-3A	37
MW-3B	45
MW-3C	60
MW-4A	22
MW-4B	34
MW-4C	40
MW-5	45

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: OW-1A
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870477
Date Water
Level Obtained: 1-19-89



WELL CONSTRUCTION DETAILS FOR OW-1A

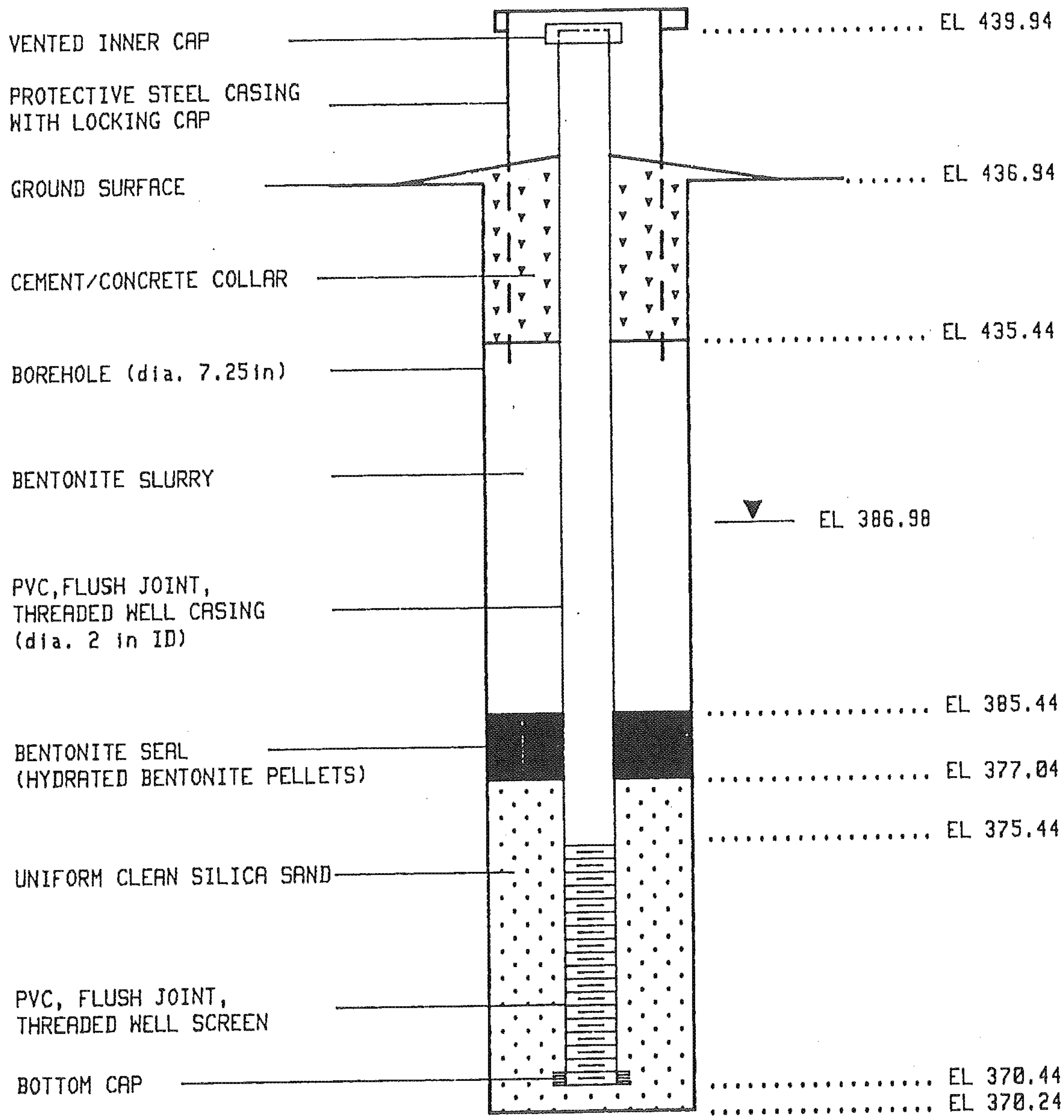
NOT TO SCALE

SCHNABEL ENGINEERING

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: OW-1B
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870477
Date Water Level Obtained: 7-11-89



WELL CONSTRUCTION DETAILS FOR OW-1B

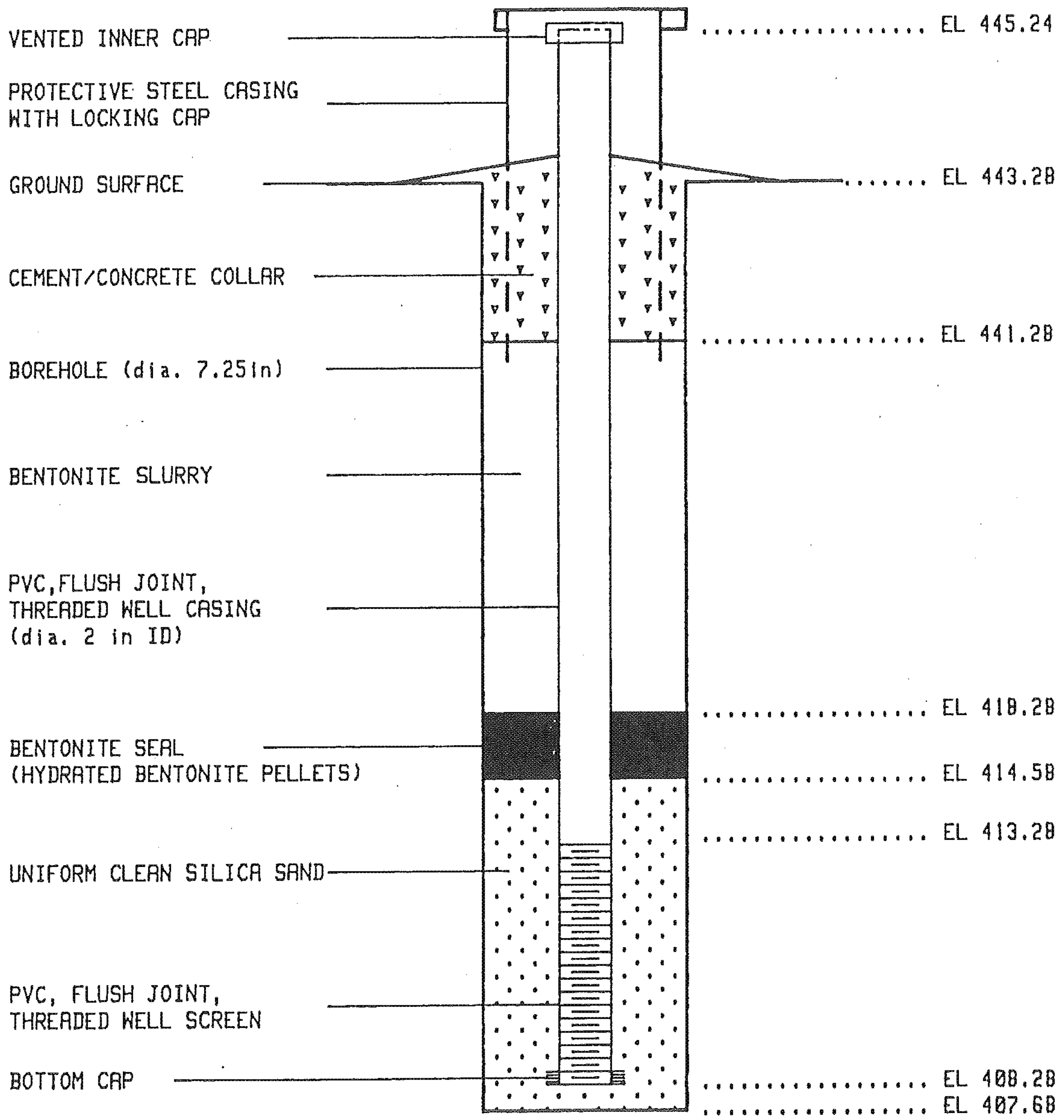
NOT TO SCALE

SCHNABEL ENGINEERING

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: MW-1
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870477
Date Water
Level Obtained: 1-19-89
DRY



WELL CONSTRUCTION DETAILS FOR MW-1A

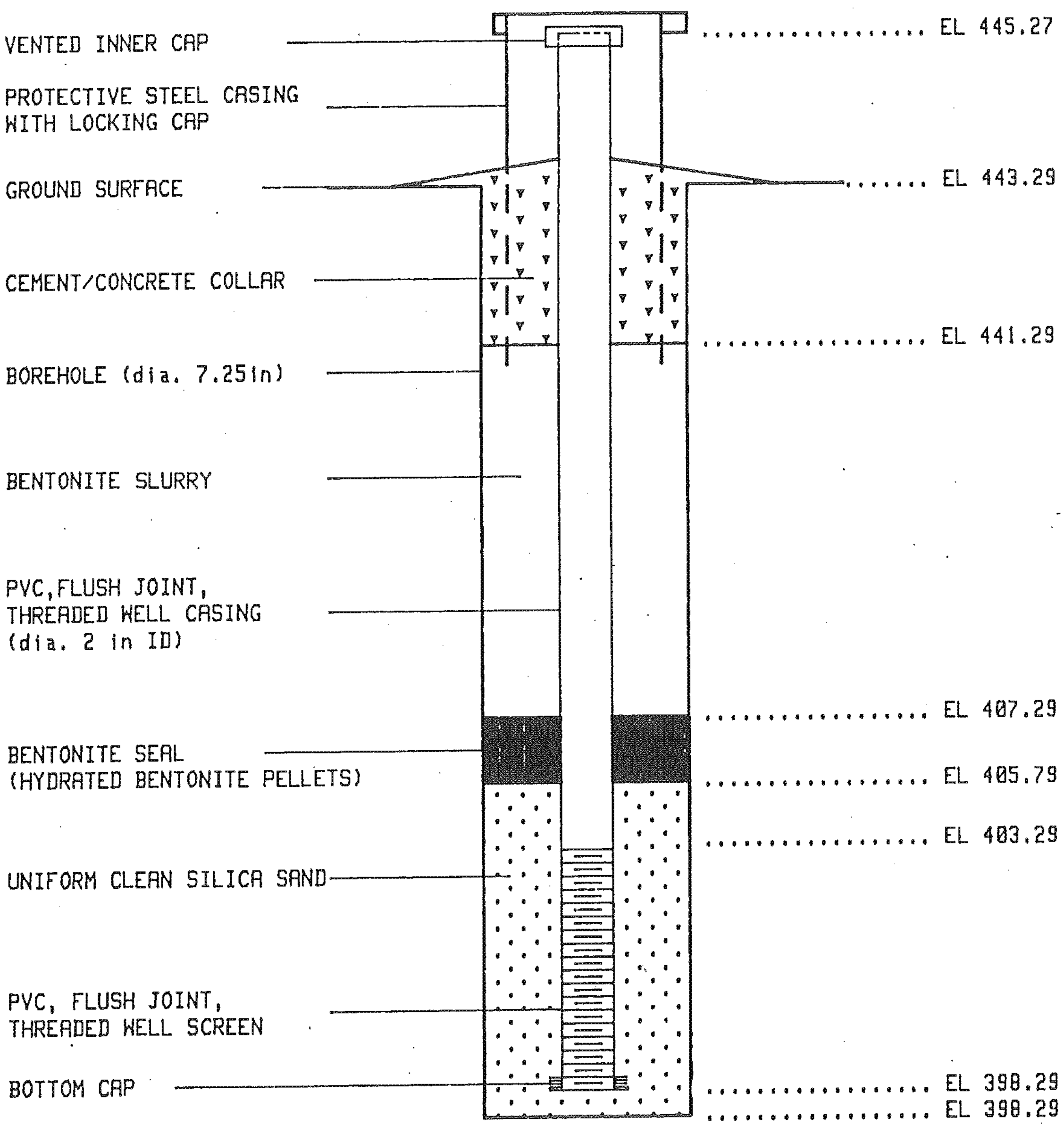
NOT TO SCALE

SCHNABEL ENGINEERING

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: MW-1
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870477
Date Water
Level Obtained: 1-17-89
DRY



WELL CONSTRUCTION DETAILS FOR MW-1B

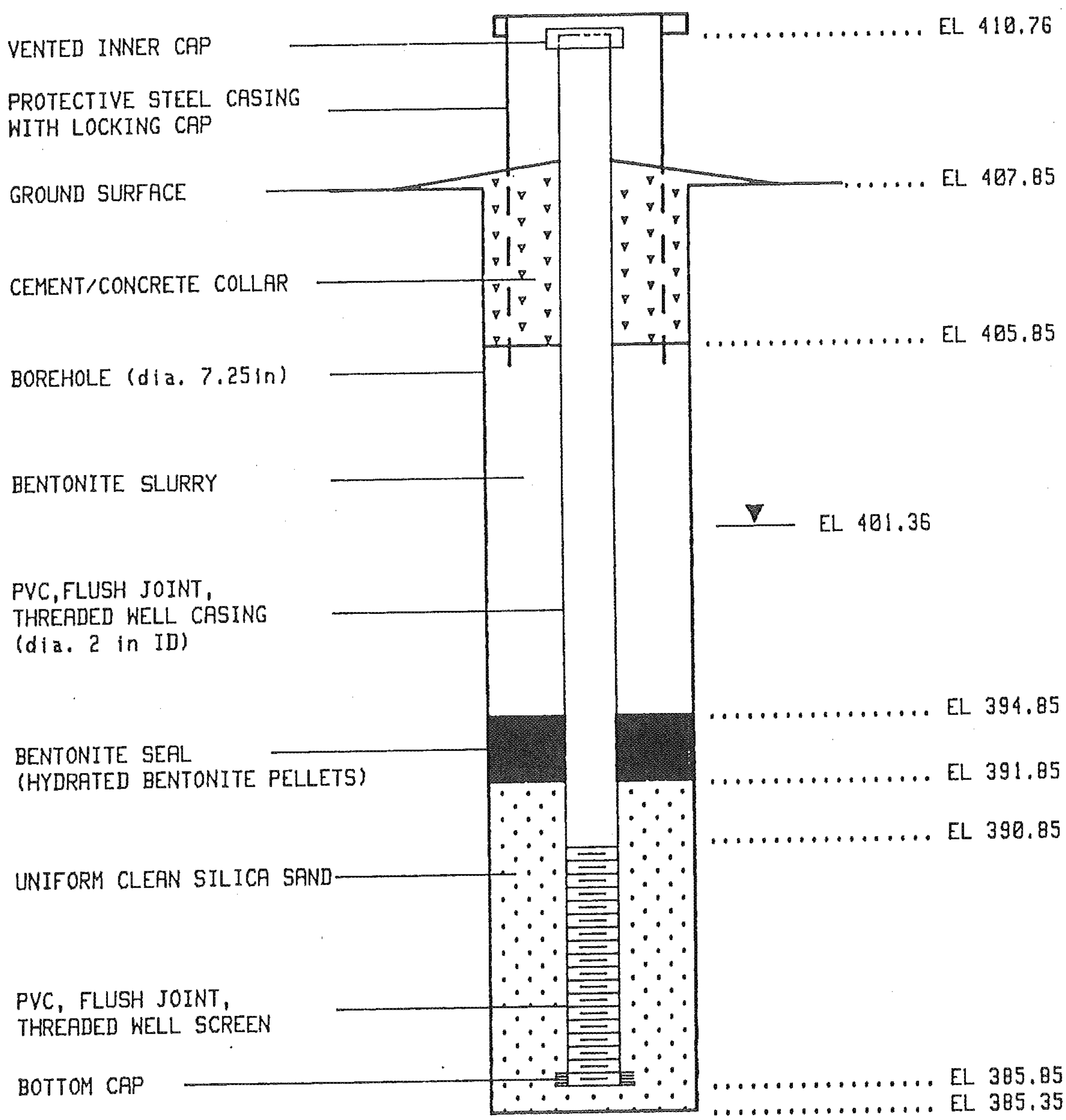
NOT TO SCALE

SCHNABEL ENGINEERING

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: MW-2
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870477
Date Water
Level Obtained: 1-19-89



WELL CONSTRUCTION DETAILS FOR MW-2A

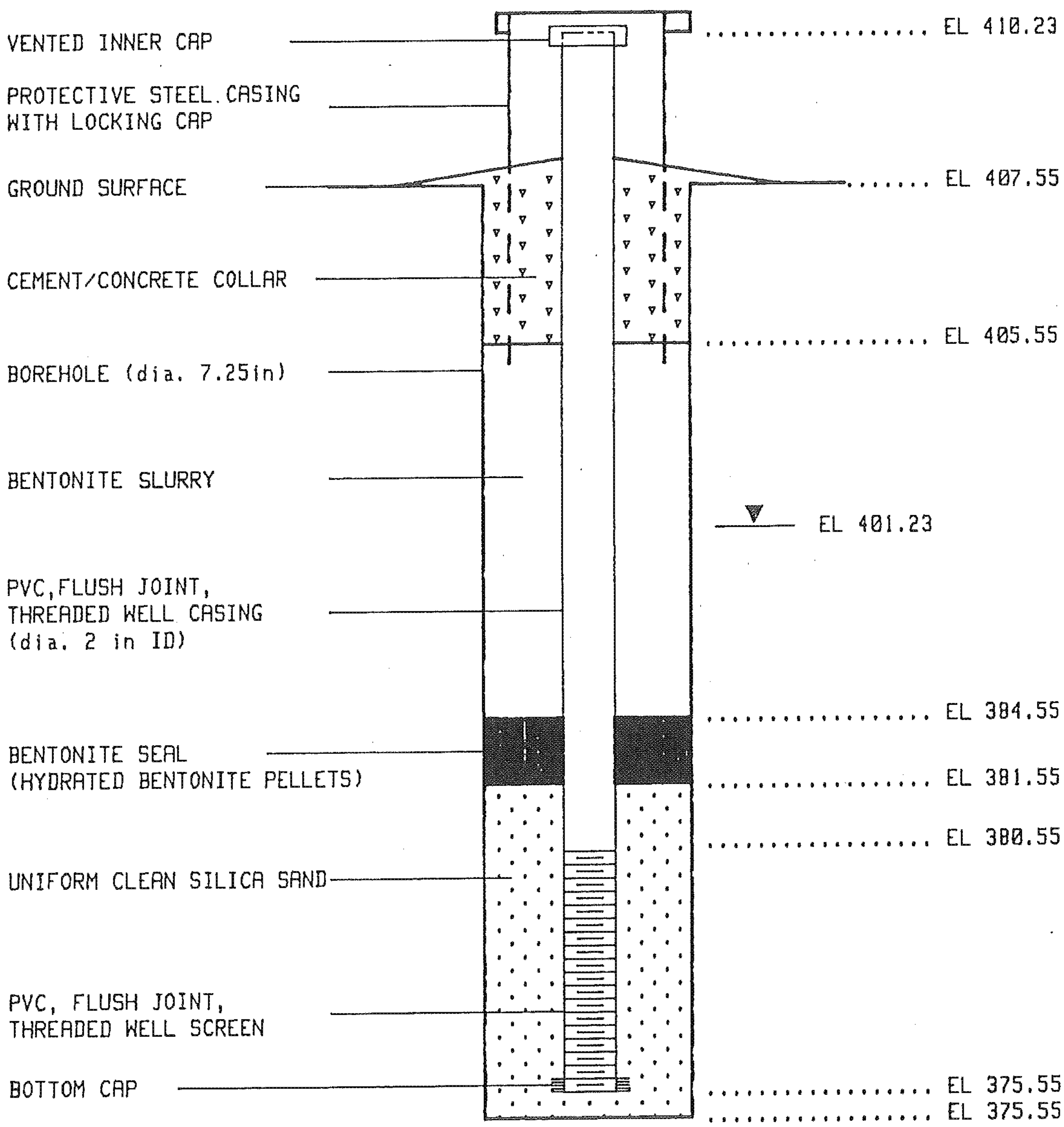
NOT TO SCALE

SCHNABEL ENGINEERING

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: MW-2
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870447
Date Water Level Obtained: 1-16-89



WELL CONSTRUCTION DETAILS FOR MW-2B

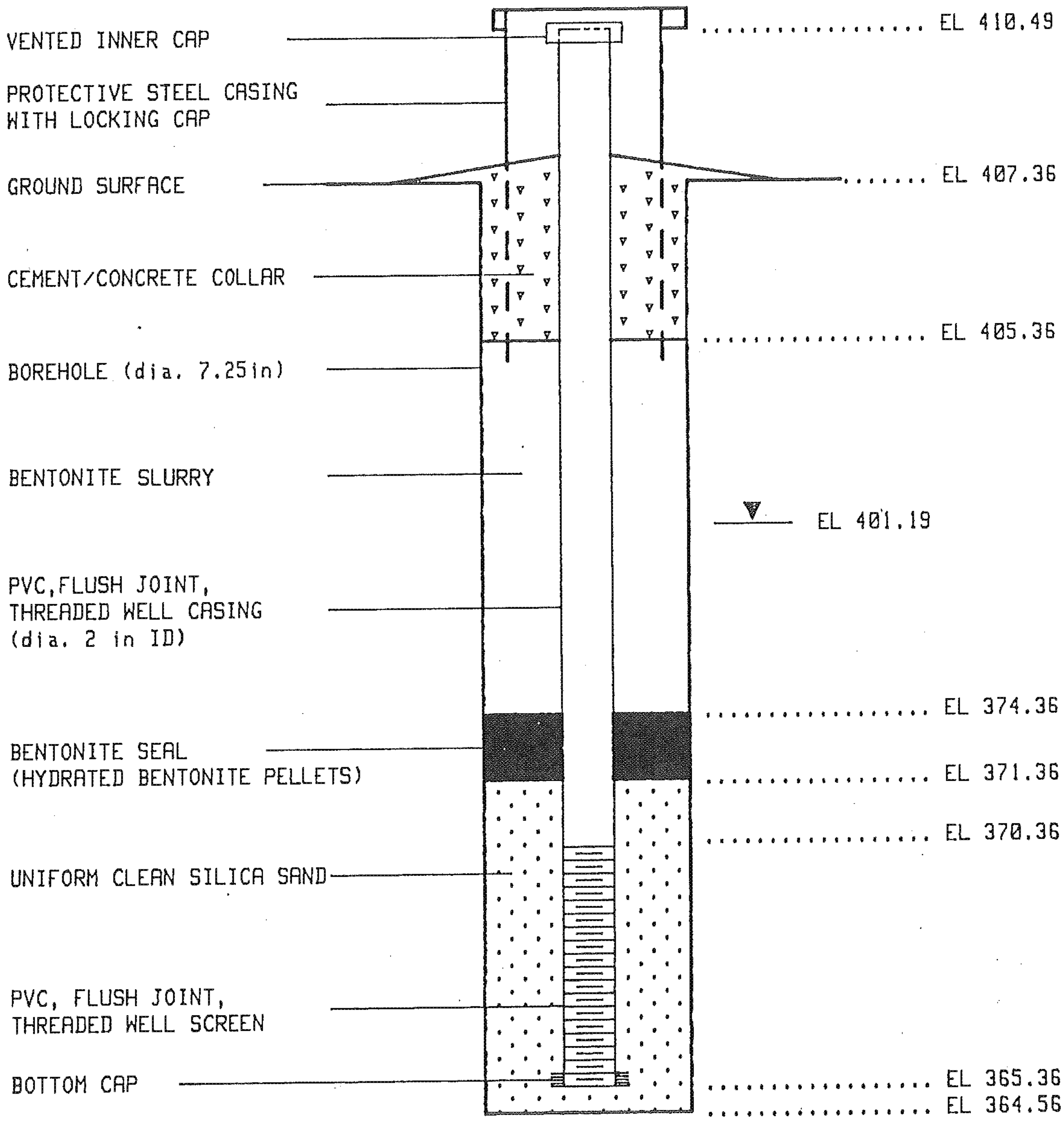
NOT TO SCALE

SCHNABEL ENGINEERING

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: MW-2
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870447
Date Water Level Obtained: 1-17-89



WELL CONSTRUCTION DETAILS FOR MW-2C

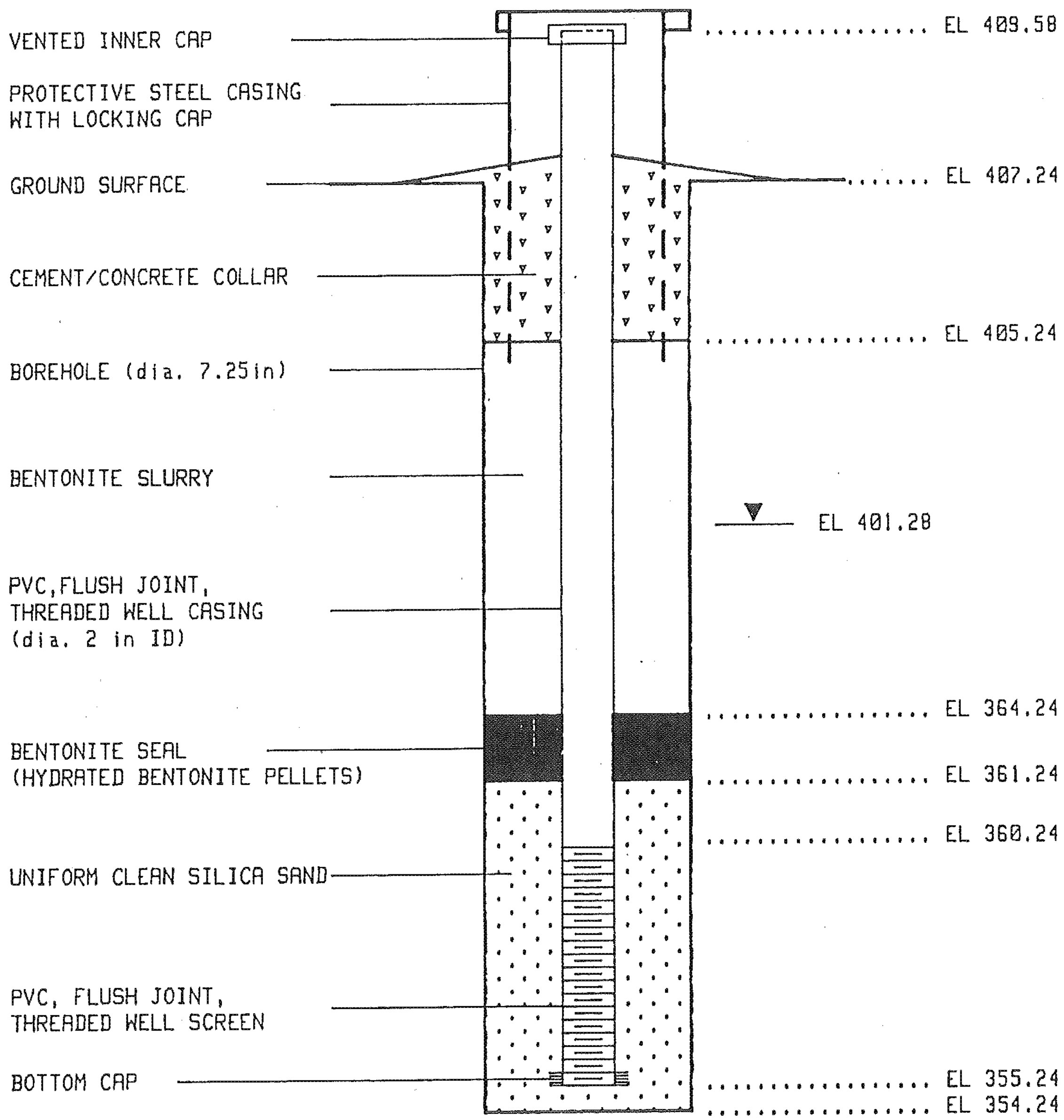
NOT TO SCALE

SCHNABEL ENGINEERING

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: MW-2
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870477
Date Water Level Obtained: 1-17-89



WELL CONSTRUCTION DETAILS FOR MW-2D

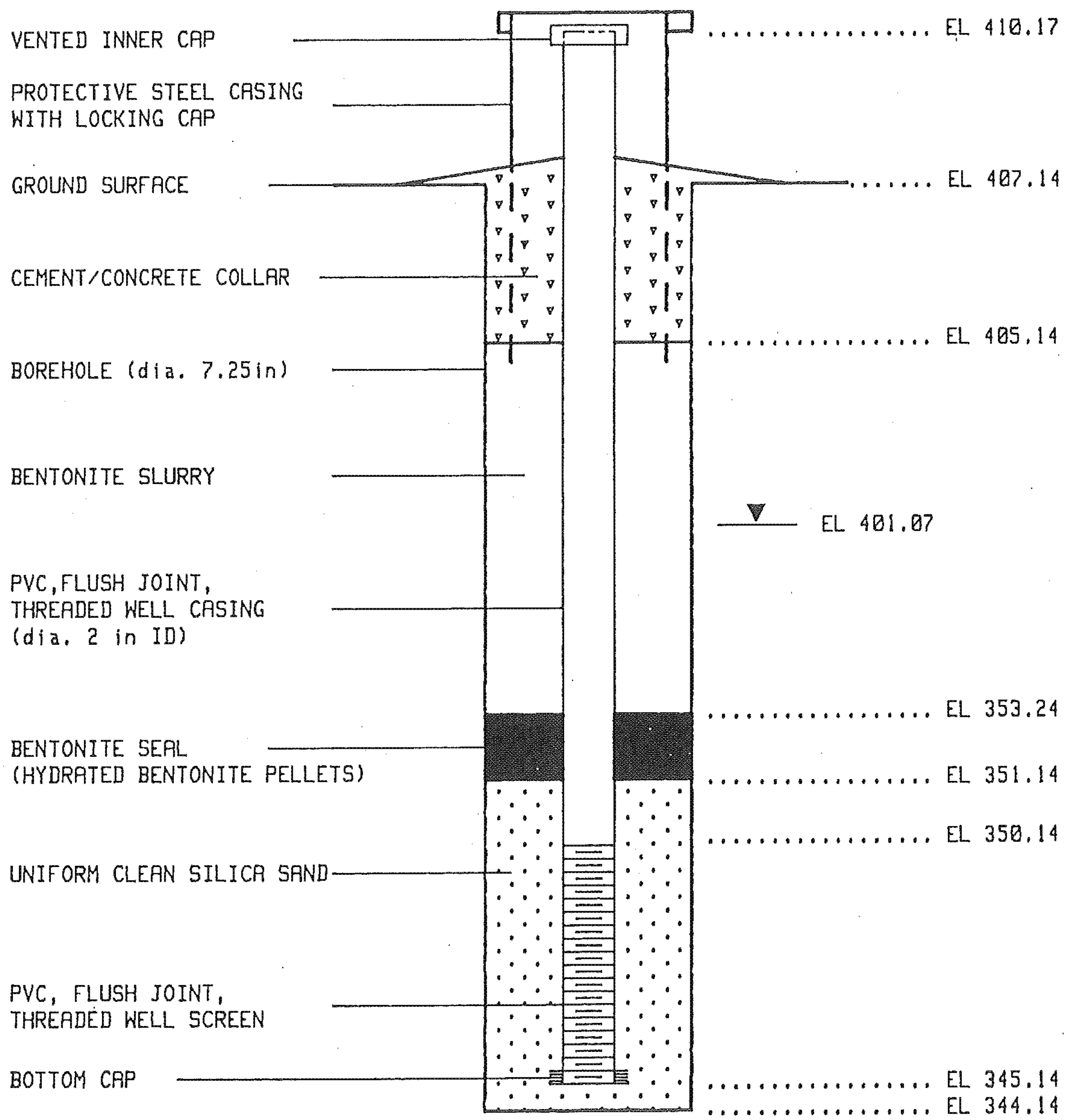
NOT TO SCALE

SCHNABEL ENGINEERING

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: MW-2
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870477
Date Water Level Obtained: 1-16-89



WELL CONSTRUCTION DETAILS FOR MW-2E

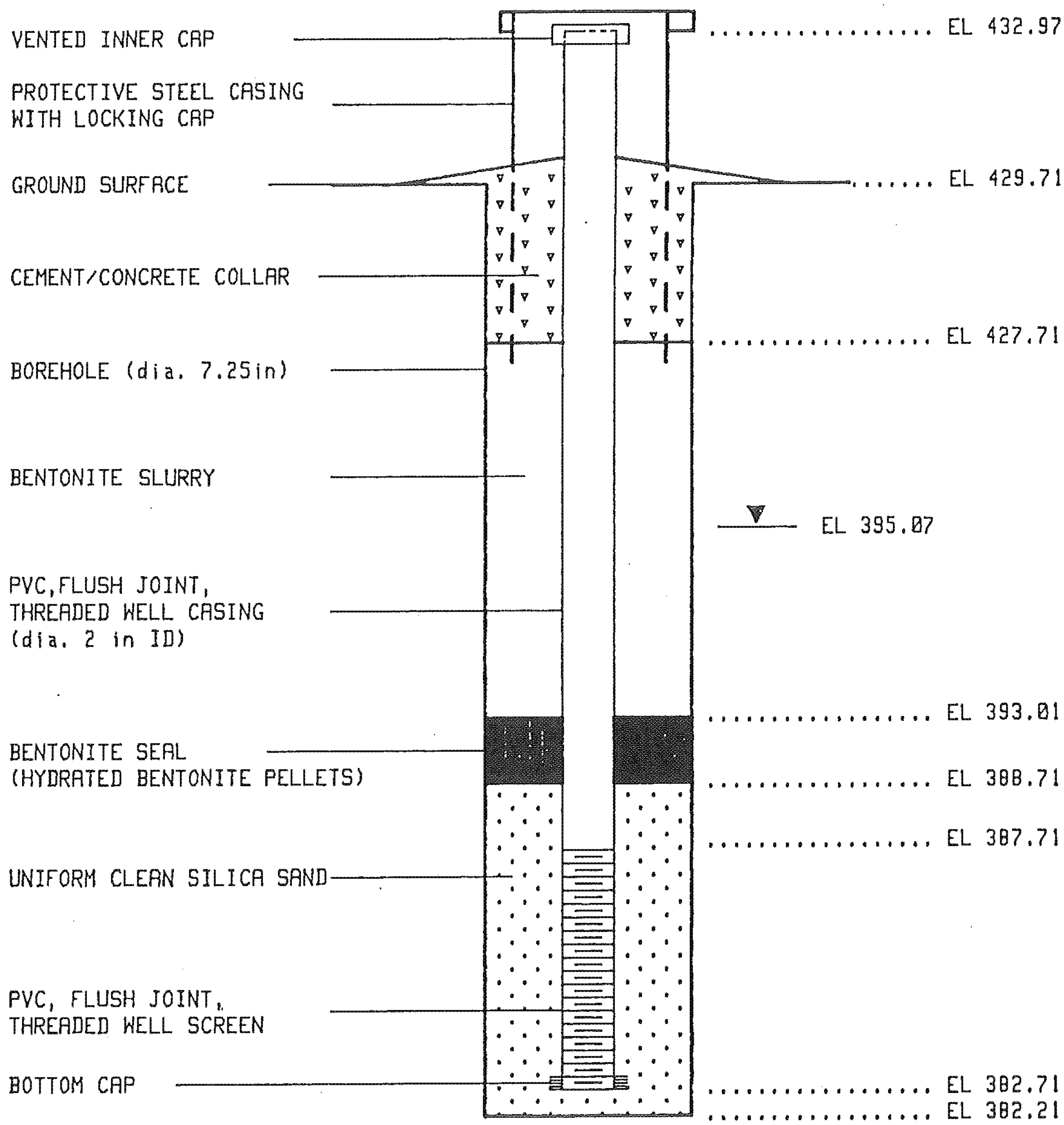
NOT TO SCALE

SCHNABEL ENGINEERING

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: MW-3
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870477
Date Water Level Obtained: 1-19-89



WELL CONSTRUCTION DETAILS FOR MW-3A

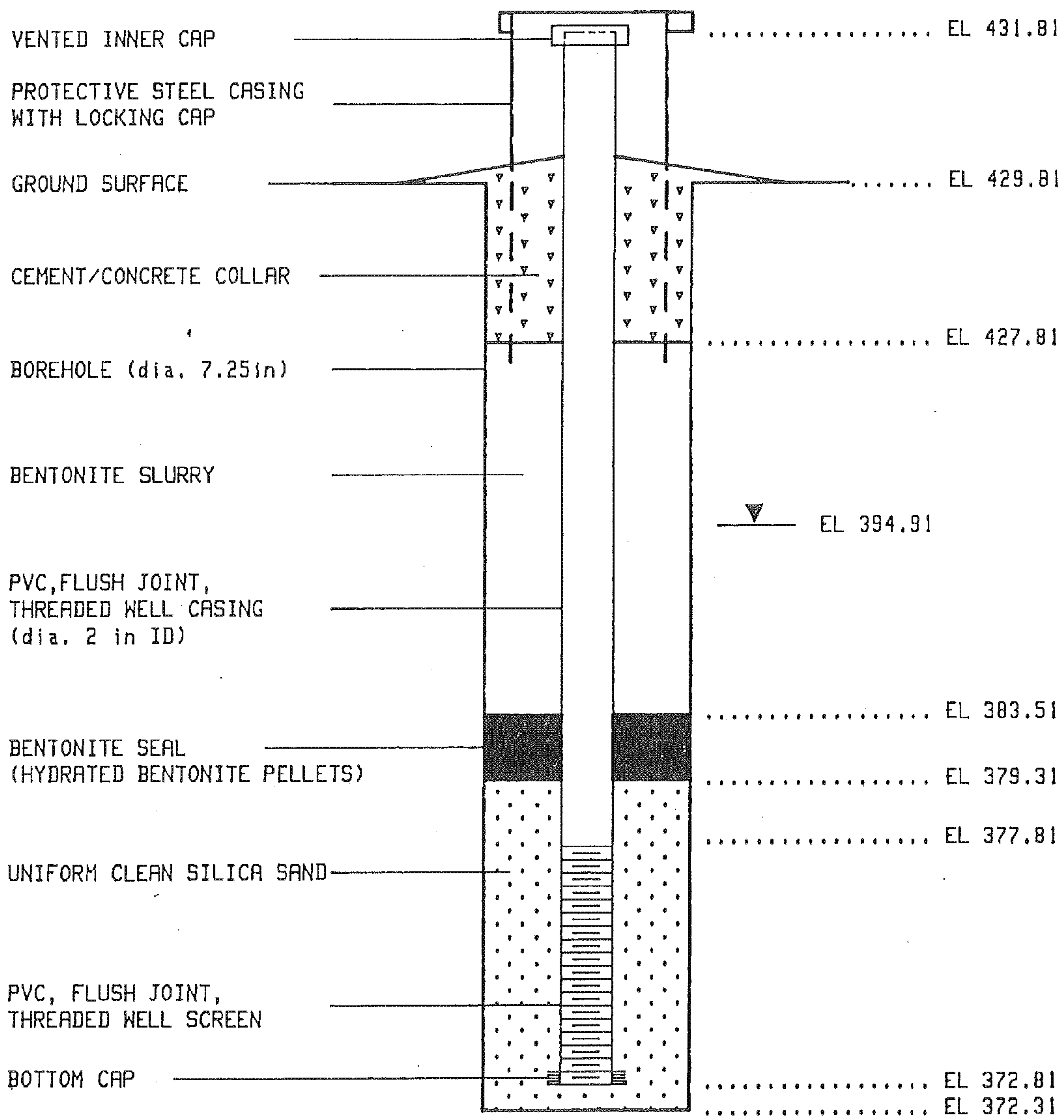
NOT TO SCALE

SCHNABEL ENGINEERING

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: MW-3
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870477
Date Water Level Obtained: 1-12-89



WELL CONSTRUCTION DETAILS FOR MW-3B

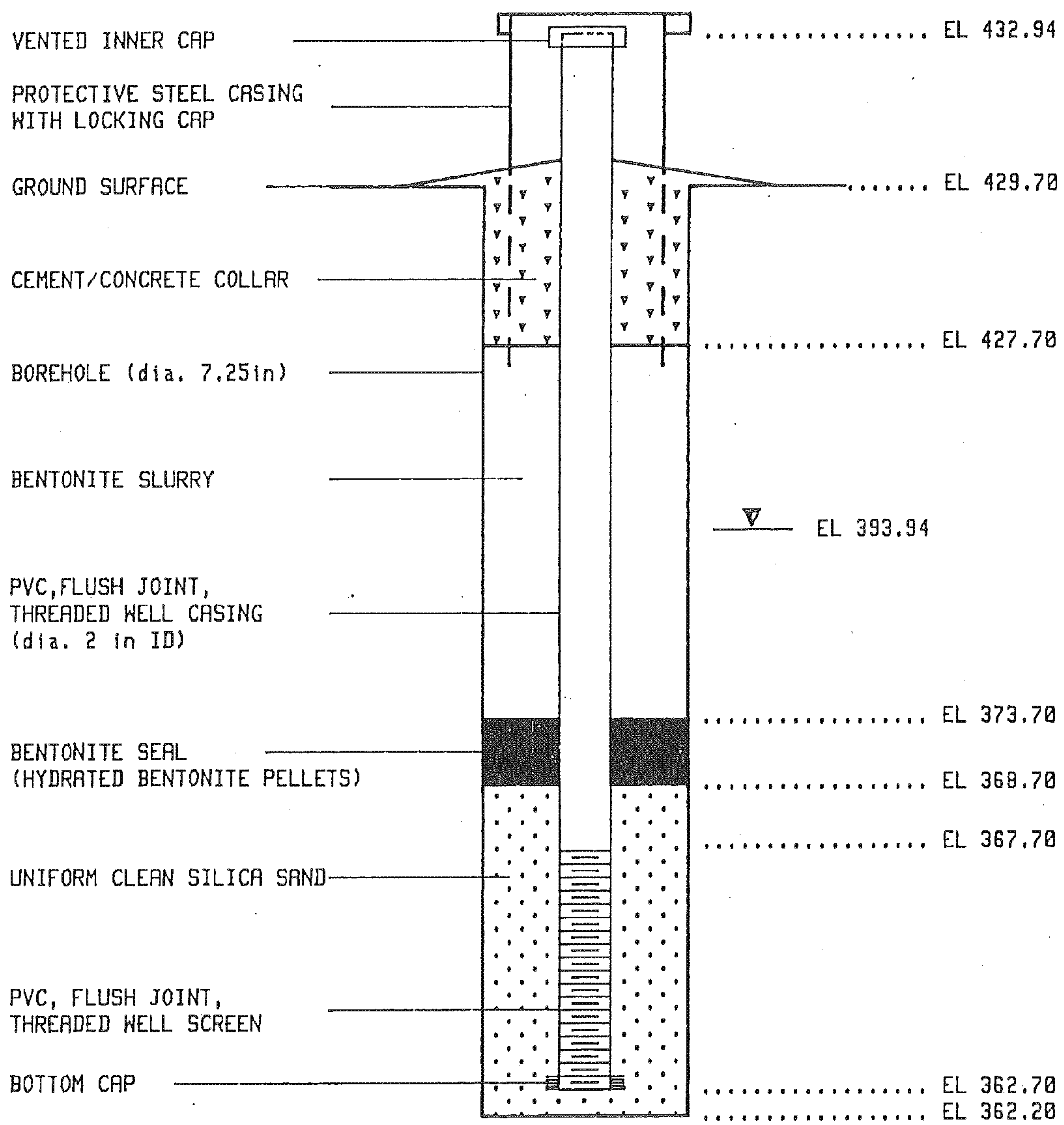
NOT TO SCALE

SCHNABEL ENGINEERING

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: MW-3
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870477
Date Water
Level Obtained: 1-12-89



WELL CONSTRUCTION DETAILS FOR MW-3C

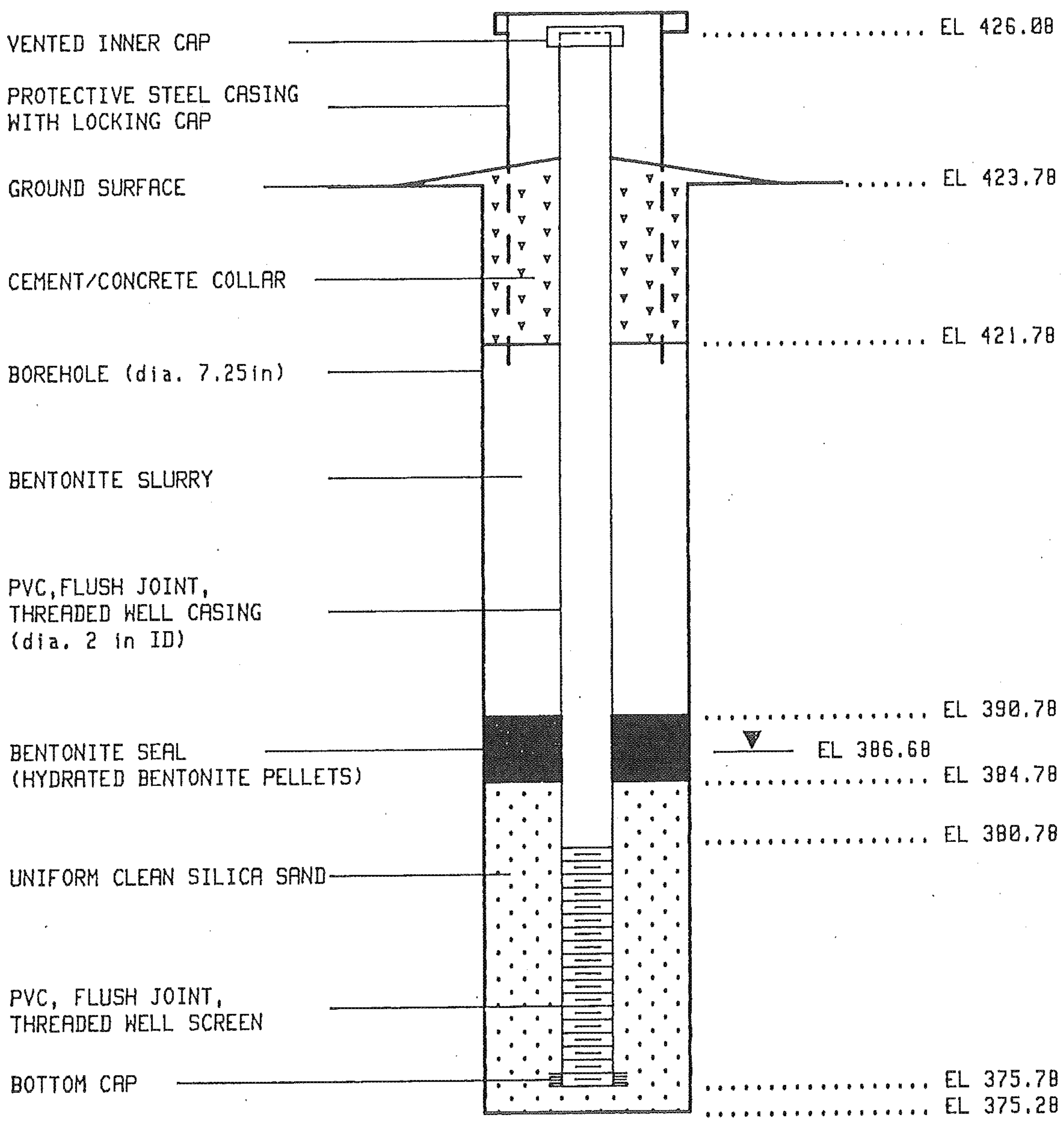
NOT TO SCALE

SCHNABEL ENGINEERING

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: MW-4
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870477
Date Water Level Obtained: 1-19-89



WELL CONSTRUCTION DETAILS FOR MW-4A

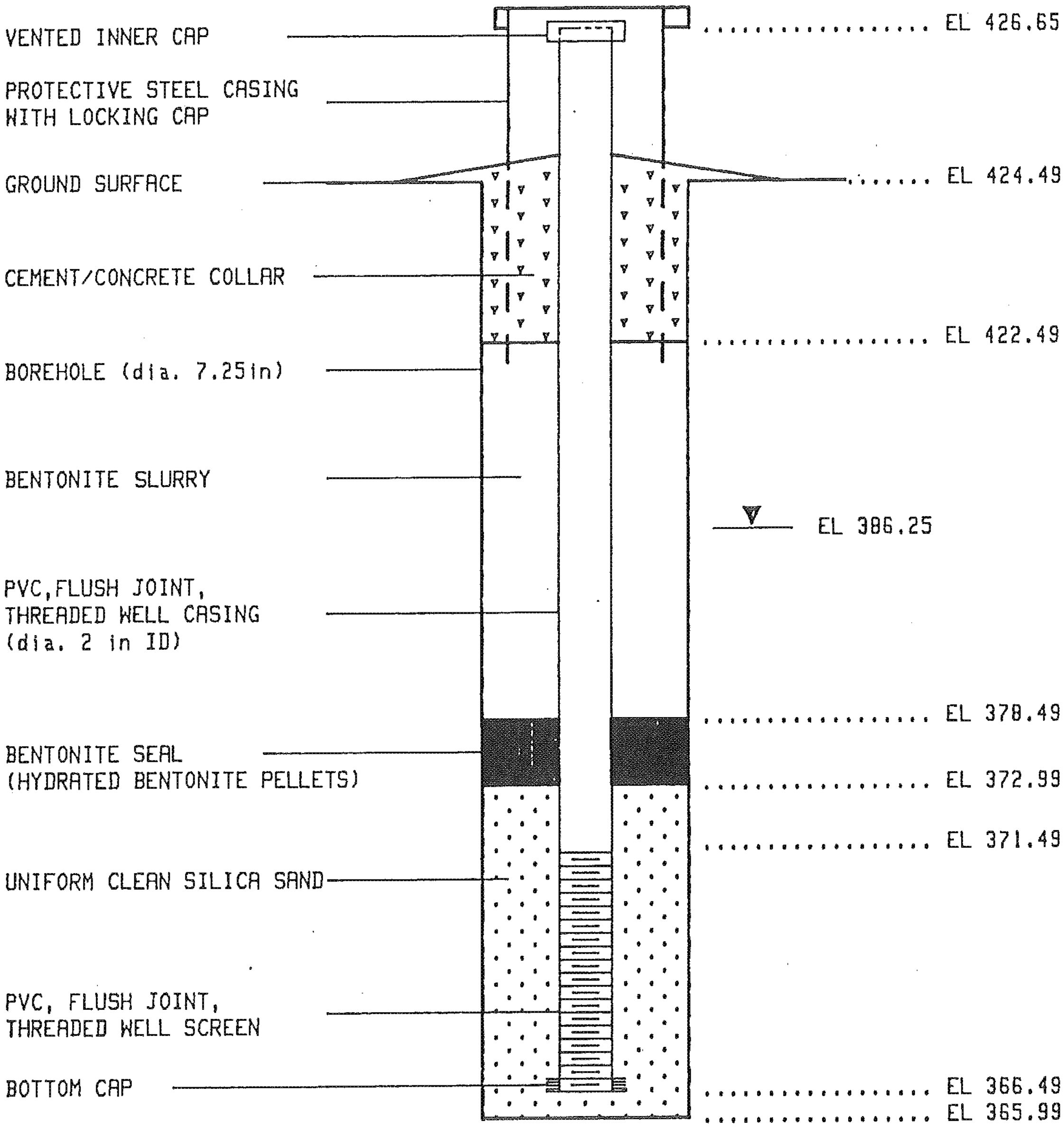
NOT TO SCALE

SCHNABEL ENGINEERING

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: MW-4
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870477
Date Water Level Obtained: 1-11-89



WELL CONSTRUCTION DETAILS FOR MW-4B

NOT TO SCALE

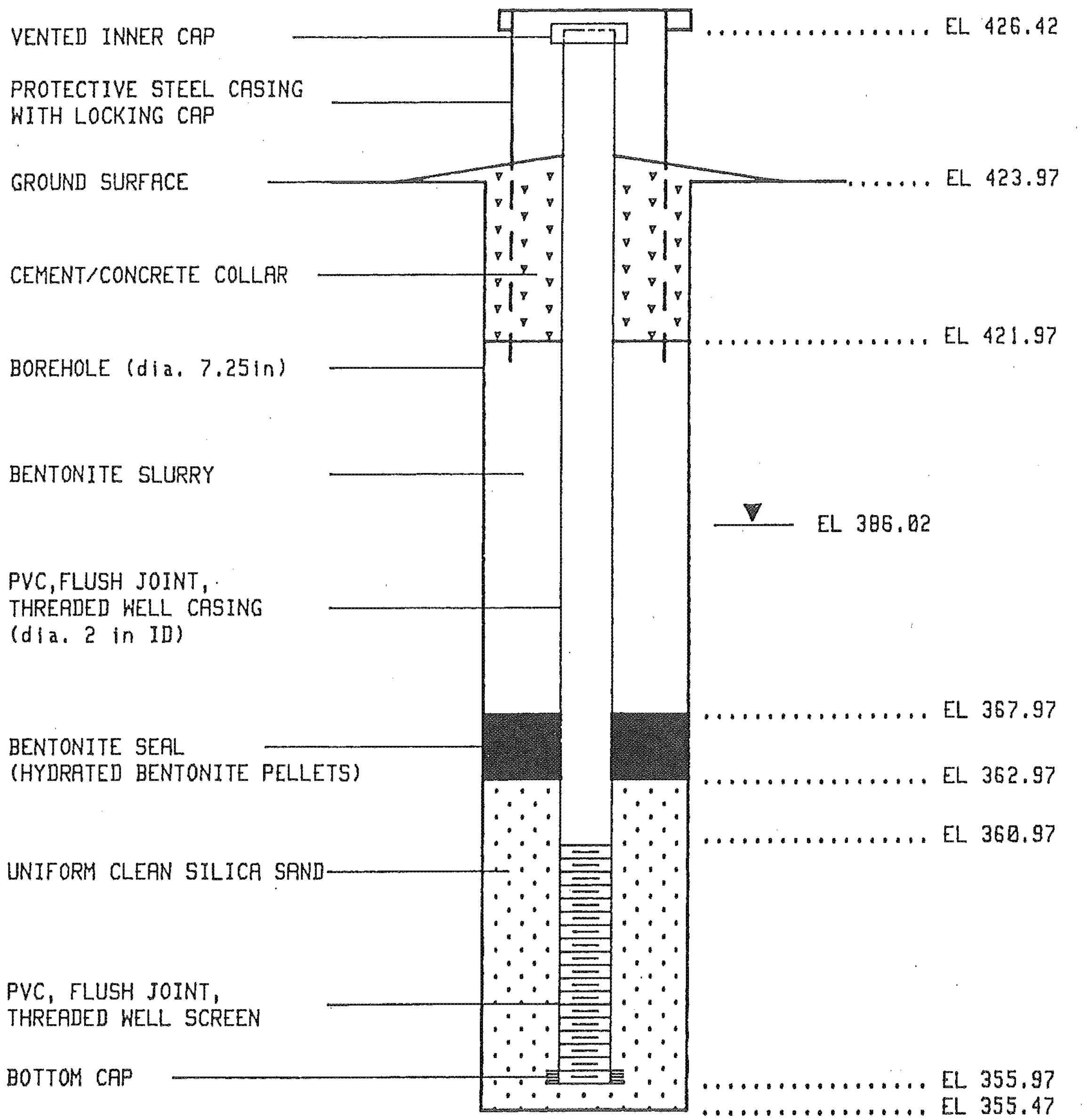
SCHNABEL ENGINEERING

ED_001691B_00019876

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: MW-4
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870477
Date Water
Level Obtained: 1-17-89



WELL CONSTRUCTION DETAILS FOR MW-4C

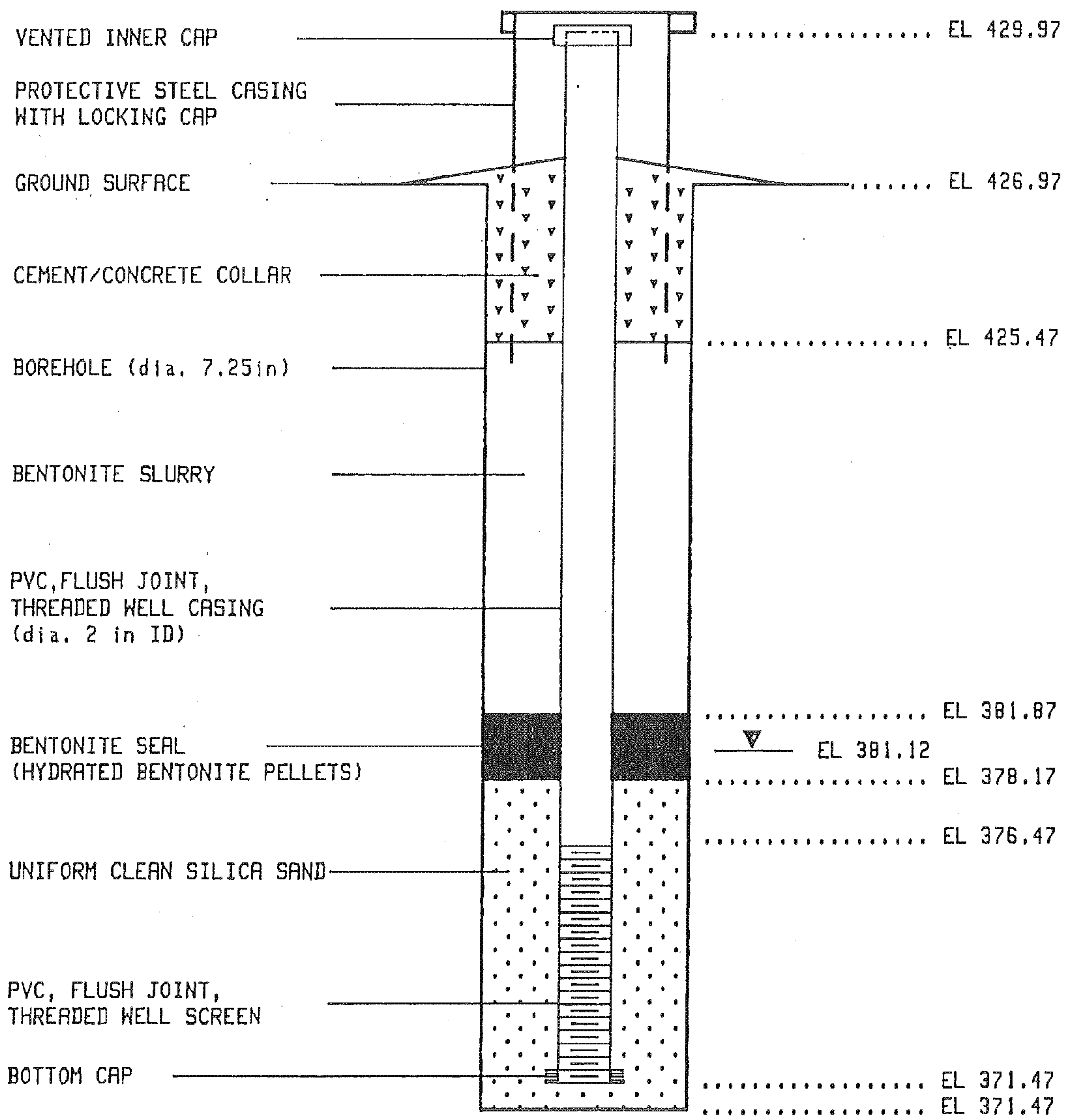
NOT TO SCALE

SCHNABEL ENGINEERING

ATLANTIC RESEARCH CORPORATION, ORANGE COUNTY FACILITY, VIRGINIA

BORING NUMBER: MW-5
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.20 Slot PVC, 5ft
CASING TYPE: 5 in, Black Iron, Locking Cap
DEVELOPMENT: Bailing with PVC Bailer

Contract No. V870477
Date Water Level Obtained: 7-19-89



WELL CONSTRUCTION DETAILS FOR MW-5

NOT TO SCALE

SCHNABEL ENGINEERING

Attachment 2

DEQ
Department of Environmental Quality

OFFICE OF WASTE TECHNICAL SUPPORT

MEMO

TO: Fuxing Zhou

THROUGH: Sanjay Thirunagari ST

FROM: Hasan Keceli H.K.

DATE: February 20, 2008

CC: Jutta Schneider

SUBJECT: Statistical Review of Attachment I.H-2 of the Report for Aerojet General Corporation

Per your request, I have reviewed Attachment I.H-2 of the report for the Aerojet General Corporation.

The report did not include the historical baseline data for all the samples analyzed in the past. Inclusion of all historical groundwater data in the report will enable the Department to expedite the review process. The facility is advised to submit to DEQ all baseline data for all monitoring events and wells along with laboratory limits of detection/quantitation within 30 days of receipt of this memorandum. The facility is also advised to submit the laboratory sheets for baseline data that had been used to calculate statistical limits for the site.

If the facility has any questions regarding this memorandum, I can be reached at (804) 698-4246.

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTE DIVISION
OFFICE OF HAZARDOUS WASTE

DEQ
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Memorandum

TO: Russ McAvoy
Environmental Engineer Sr.

THROUGH: Jutta Schneider JS
Hazardous Waste/Groundwater Manager

FROM: Fuxing Zhou FZ
Environmental Specialist II

DATE: February 8, 008

SUBJ: COMPLETENESS AND 1ST ROUND TECHNICAL REVIEW
RCRA Permit Application - Part B
Thermal Treatment Units (Open Burning) for Waste Propellants
Aerojet General Corporation, Orange County Facility
Culpeper, VA
EPA ID No. VAD981112618

I have completed the completeness and 1st round technical review of the groundwater portions for Part B of the Permit Application, dated September 28, 2007. My review included the following sections in the application:

- I.B. FACILITY DESCRIPTION
  - I.B.1. General Description of Facility
    - I.B.1.a. Waste Generation and Management
    - I.B.1.b. Location
  - I.B.2. Topographic Map
  - I.B.3. Description of Treatment Units
- I.C. WASTE CHARACTERISTICS
  - I.C.1. Physical and Chemical Characteristics of Waste and Residues
  - I.C.2. Copy of the Waste Analysis Plan
- I.G. CLOSURE PLAN
  - I.G.1. Closure Plan Documentation
- I.H. PROTECTION OF GROUNDWATER PLAN
- II.B. ENVIRONMENTAL PERFORMANCE STANDARDS
  - II.B.2. Hydrogeological Characteristics of the Site
  - II.B.3. Protection of Groundwater

II.B.3.b. Groundwater Quality and Sources of Contamination
II.B.3.c. Quantity and Direction of Groundwater Flow
II.B.3.d Proximity to Current and Potential Groundwater Users

II.E. PROPOSED COMPLIANCE MONITORING PROGRAM
II.E.2.2 Groundwater (Compliance Monitoring)

My comments on these sections are provided below.

1. <u>POST-CLOSURE PLAN (Section I.G)</u>

The application does not include a post-closure plan in Section I.G. The facility must submit a post-closure plan with the application (I.G.2 "Post-closure Plan").

2. <u>ADDITIONAL GEOLOGICAL CROSS SECTION (I.H.1.b "Geology and Soil")</u>

Attachment I.H.1 provides two Subsurface Profiles (Geological Cross Sections) in Figure 5 (cluster wells MW-2 through MW-3 to MW-4) and Figure 6 (cluster wells MW-1 to MW-3). The facility should prepare and submit a Subsurface Profile (Geological Cross Section) from cluster wells MW-4A, 4B and 4C through well MW-5 to cluster wells OW-1A and 1B, a figure like Figures 5 and 6 in Attachment I.H.1. Because this cross section will go through the proposed point of compliance monitoring locations, it will further document the hydrogeological characteristics and groundwater flow at the facility; and help explain any data collected.

3. <u>GROUNDWATER FLOW, DIRECTION, AND RATE (Section I.H.1.c)</u>

A. The facility provided an October-1989 groundwater elevation contour map (Figure 9 in Attachment I.H.1), and historical groundwater elevation data from 1996 to 2006 year are included in Table I.H.4. The facility should prepare additional contours maps for several recent monitoring events and include them in the application. Groundwater elevation and flow direction may change with time and location. The maps will allow the Department to evaluate these variations. To establish one groundwater line, at least three wells at different locations must be used.

B. The text indicates that the groundwater flow directions in shallow aquifers "commonly mimic topography". Based on the topography at the site (Figure I.S-1), the top of bedrock contour map (Figure 7 in Attachment I.H.1) and the map of the soil thickness above the bedrock (Figure 8 in Attachment I.H.1), the flow direction shown in Figure 9 in Attachment I.H.1 may not represent the actual conditions at the site. It seems possible that groundwater under the treatment area may flow toward two different directions, namely toward the two topographic lows to the south and north. The facility should determine groundwater elevations to the south of the site to further characterize and confirm groundwater flow at the site.

4. <u>GROUNDWATER QUALITY DATA (Section I.H.2)</u>

A. The facility provided groundwater quality data from 1996 to 2006 for chromium, ammonia, lead, pH, Total Organic Carbon (TOC), Total Organic Halides (TOX), Total Suspended Solids (TSS), and Specific Conductivity (SC) (Table I.H.2). The facility indicates that an extended list of parameters (metals, VOCs and SVOCs) was also analyzed on an annual basis and that Table I.H-1

II. RESPONSES TO GROUND WATER COMMENTS (FROM STATISTICAL AND GENERAL REVIEWS)

Aerojet Introductory Note: The responses to each comment in this section reflect agreements reached during a teleconference on October 13, 2009 with the Groundwater and Statistical staff at DEQ when we discussed questions and issues related to each of DEQ's Ground Water related comments.

Comments Applicable to Groundwater Technical Review by Hasan Keceli (in DEQ Memo dated February 20, 2008, to Fuxing Zhou; Re: Statistical Review of Attachment I.H-2 of the Report for Aerojet Corporation):

Comment: The report did not include the historical baseline data for all the samples analyzed in the past. Inclusion of all historical groundwater data in the report will enable the Department to expedite the review process. The facility is advised to submit to DEQ all baseline data for all monitoring events and wells along with laboratory limits of detection/quantitation within 30 days of receipt of this memorandum. The facility is also advised to submit the laboratory sheets for baseline data that had been used to calculate statistical limits for the site.

Response: Aerojet is compiling historical data files for the facility baseline sampling of environmental media conducted in 1989-1990 prior to the operation of the thermal treatment facility (TTF) which commenced in 1990 under the EPA RD&D permit. Aerojet will supply this data within approximately 30 days following the submittal of this correspondence to allow us time for generating summary tables in Excel format. For information regarding historical monitoring data collected after the commencement of thermal treatment operations at the facility, refer to the response to Comment #4 below.

Comments applicable to Groundwater Technical Review by Fuxing Zhou (in DEQ Memo dated February 8, 2008, to Russ McAvoy; Re: Completeness and 1st Round Technical Review):

Comment:
1. **POST-CLOSURE PLAN (Section I.G):** The application does not include a post-closure plan in Section I.G. The facility must submit a post-closure plan with the application (I.G.2 "Post-closure Plan").

Response: This issue was discussed with the DEQ Groundwater staff during a conference call on October 13, 2009. The regulatory requirements for Closure and Post-Closure are contained at 40 CFR § 264.Subpart G. Aerojet asserted that a Post-Closure Plan is only necessary if the planned clean closure of the thermal treatment facility (TTF) cannot be achieved, and should not be a requirement of the RCRA Hazardous Waste Permit until such time that one is needed. Aerojet confirmed that the TTF has never been used as a hazardous waste disposal facility(e.g., land treatment, waste piles) – all open burn activities have been conducted in steel pans; therefore, it should not be required to have a Post-Closure Plan until such time that it becomes evident that hazardous waste will be left in place following closure activities, as stipulated in 40 CFR § 264.118, Post-Closure Plan; amendment of plan (see below). In a follow-up conference call with DEQ permit reviewers Russell McAvoy and Hassan Vakili on December 15, 2009, it was confirmed that requirements applicable to land disposal units (hazardous waste disposal facilities) were not applicable to the Aerojet TTF, and therefore a Post-Closure Plan would not be necessary at this time. Language already included in the Part B Permit Application at the end of Section I.G.1.a will be expanded to reflect the regulatory requirements for a Post-Closure Plan should one become necessary if clean closure cannot be achieved. The language change requested (and agreed to by Aerojet) in Comment #78 of the DEQ Technical Review Comments specifies the regulatory requirements for a Post-Closure Plan. As such, no further action is deemed necessary pursuant to this comment.

ENVIRONMENTAL ALLIANCE

Comment:

2. **ADDITIONAL GEOLOGICAL CROSS SECTION (I.H.1.b "Geology and Soil"):**
Attachment I.H.1 provides two Subsurface Profiles (Geological Cross Sections) in Figure 5 (cluster wells MW-2 through MW-3 to MW-4) and Figure 6 (cluster wells MW-1 to MW-3). The facility should prepare and submit a Subsurface Profile (Geological Cross Section) from cluster wells MW-4A, 4B and 4C through well MW-5 to cluster wells OW-1A and 1B, a figure like Figures 5 and 6 in Attachment I.H.1. Because this cross section will go through the proposed point of compliance monitoring locations, it will further document the hydrogeological characteristics and groundwater flow at the facility; and help explain any data collected.

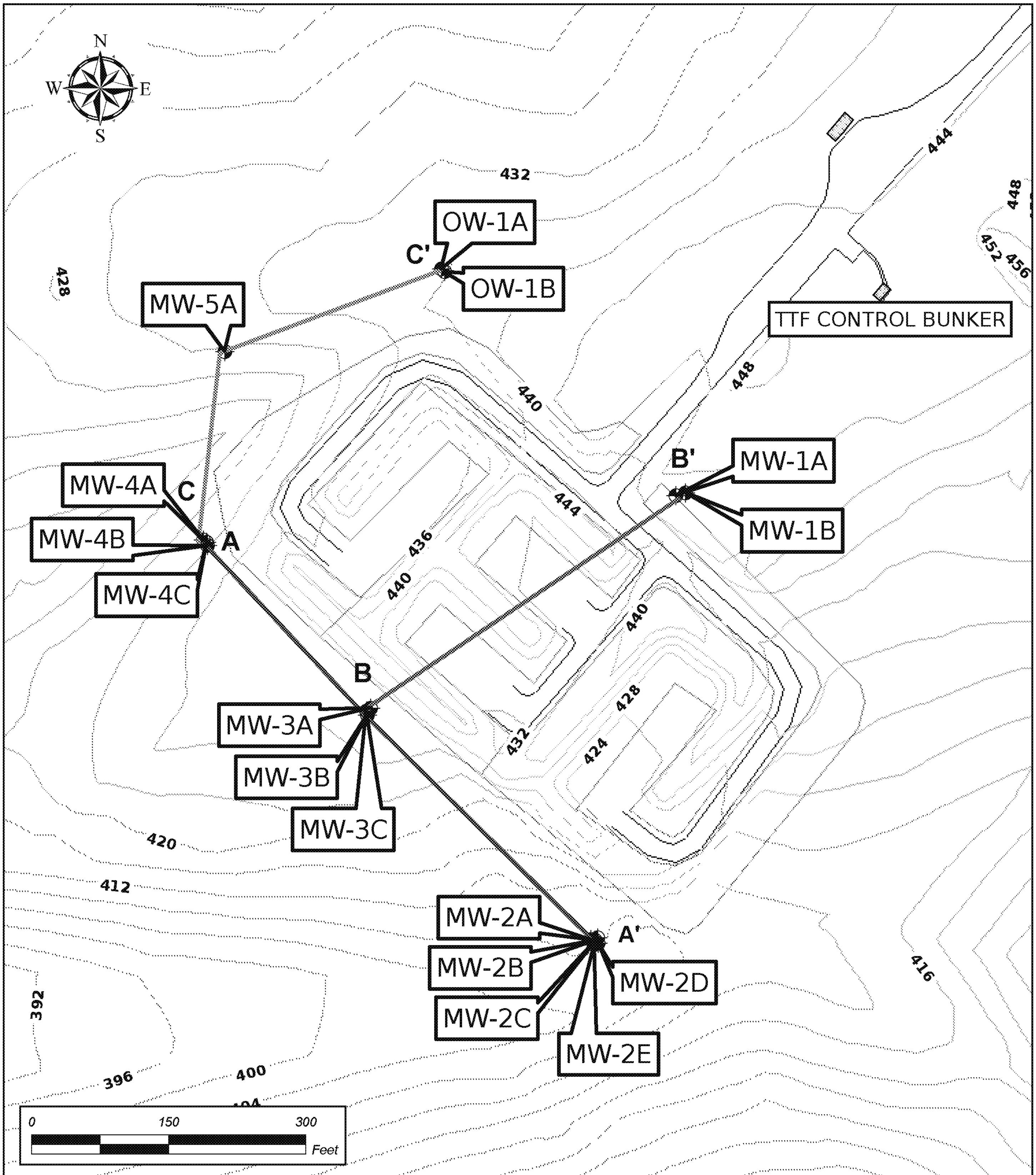
Response: The requested Geological Cross Section (designated C-C') from cluster wells MW-4A, 4B, and 4C through well MW-5 to cluster wells OW-1A and 1B is attached as Figure GW-1B. A Cross-Section Location Map (Figure GW-1A) is also included to show the location of this new profile relative to previous profiles submitted in Attachment I.H-1 (Figures 5 and 6 of the Hydrogeological Investigation and Monitoring Well Network Report (Schnabel Engineering Associates, 1989)).

Aerojet will add language to the end of the first paragraph under the heading <u>Soil Logging</u> in Section I.H.1.b.2, Soils, to include these additional figures in the Part B Permit Application. The paragraph currently states:

"Logging of unsaturated soils encountered during test borings and well installations was performed to identify subsurface conditions. Soil boring logs are presented in Appendix A of the Hydrogeological Investigation. Four strata were identified, from highest to lowest: Stratum A (Alluvial), Stratum B (Residual), Stratum C (Disintegrated Bedrock) and Stratum D (Bedrock). Subsurface profiles of these strata are presented in Figures 5 and 6 of the Hydrogeological Investigation."

The following language will be added at the end of this paragraph:

"At the request of DEQ, Aerojet has prepared an additional Geological Cross Section (designated C-C') from cluster wells MW-4A, 4B, and 4C through well MW-5 to cluster wells OW-1A and 1B. This additional profile is included at the beginning of Attachment I.H-1 as Figure GW-1B. A Cross-Section Location Map (Figure GW-1A) is also included to show the location of this new profile relative to previous profiles submitted in Attachment I.H-1 (Figures 5 and 6 of the Hydrogeological Investigation and Monitoring Well Network Report (Schnabel Engineering Associates, 1989)."



Legend

A-A'
C-C'
B-B'
Topographic Elevation Contour

Source: Topographic contours obtained for Orange County, VA via www.Onlinegis.net/vaorange, 12/9/08

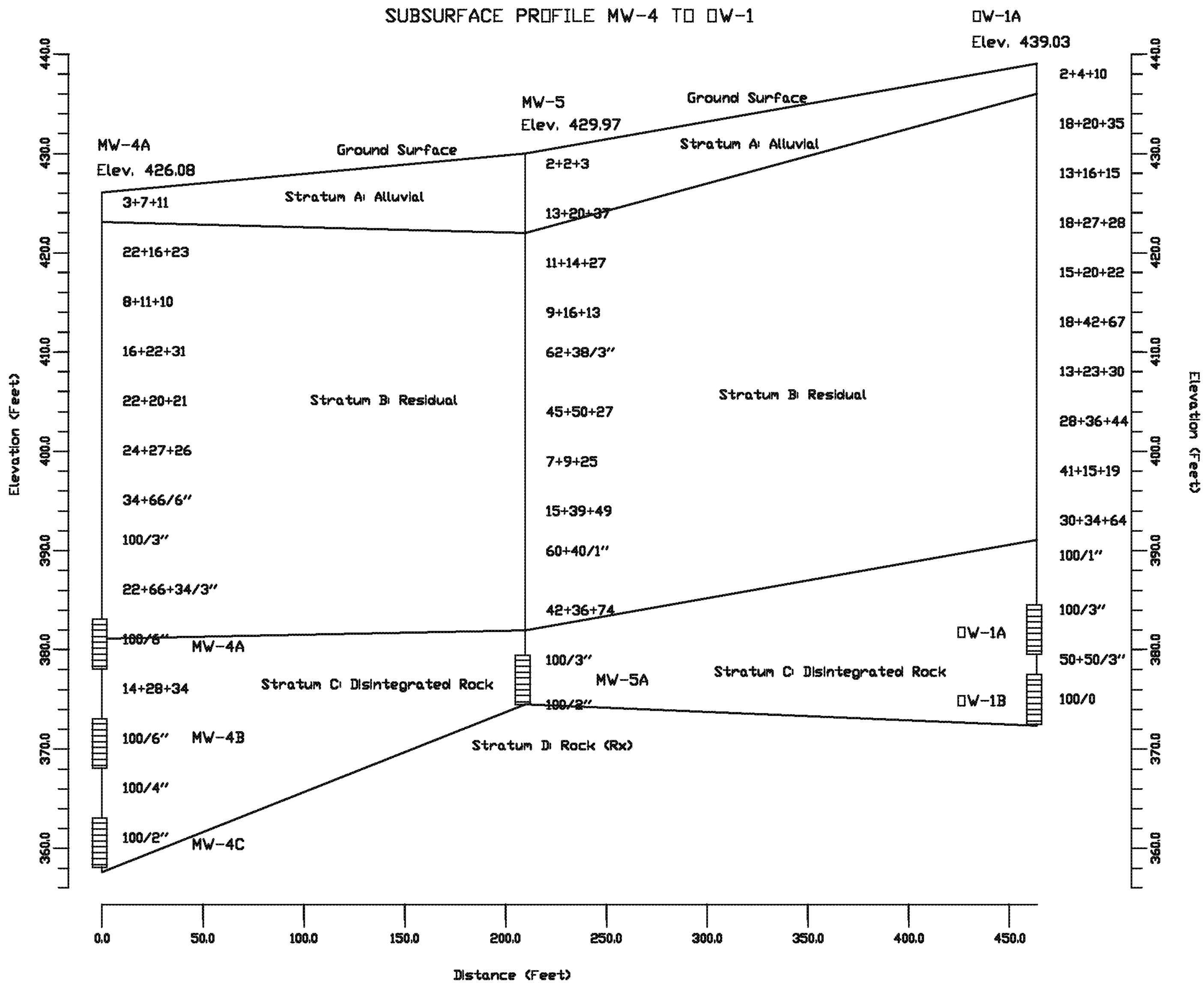
Environmental Alliance, Inc.
660 Yorklyn Road, Hockessin, DE 19707
Phone: (302) 234-4400 - Fax: (302) 234-1535

Aerojet Facility
Orange County, Virginia

Cross-Section Location Map

DESIGNED BY:	DRAWN BY:	UPDATED BY:	FIGURE NO.:
JE	SKJ	---	
APPROVED BY:	PROJECT NO.: 1743	DATE: 11/20/2009	GW-1A

1/20/2010 9:16 AM



Legend

WELL SCREEN LOCATION

100/6" BORING BLOW COUNT

Scale:

10'

50'

Source:

Test Boring Logs, Schnabel Engineering Associates

Subsurface Profile A-A', Schnabel Engineering Associates

Environmental Alliance, Inc.
660 Yorklyn Road - Hockessin, DE 19707
Phone: (302) 234-4400 - Fax: (302) 234-1535

AEROJET FACILITY
ORANGE COUNTY, VIRGINIA

Cross-Section C-C'

DESIGNED BY:	DRAWN BY:	UPDATED BY:	FIGURE NO:
JE	KMB	–	GW-1B
APPROVED BY:	PROJECT NO. 1743	DATE: 1/20/2010	

J:\EAI_files\1743_Aerojet\Rockworks\Rock1.dwg

Comment:

3. **GROUNDWATER FLOW, DIRECTION, AND RATE (Section I.H.1.c):**
   A. The facility provided an October-1989 groundwater elevation contour map (Figure 9 in Attachment I.H.1), and historical groundwater elevation data from 1996 to 2006 year are included in Table I.H.4. The facility should prepare additional contours maps for several recent monitoring events and include them in the application. Groundwater elevation and flow direction may change with time and location. The maps will allow the Department to evaluate these variations. To establish one groundwater line, at least three wells at different locations must be used.

   B. The text indicates that the groundwater flow directions in shallow aquifers "commonly mimic topography". Based on the topography at the site (Figure I.S-1), the top of bedrock contour map (Figure 7 in Attachment I.H.1) and the map of the soil thickness above the bedrock (Figure 8 in Attachment I.H.1), the flow direction shown in Figure 9 in Attachment I.H.1 may not represent the actual conditions at the site. It seems possible that groundwater under the treatment area may flow toward two different directions, namely toward the two topographic lows to the south and north. The facility should determine groundwater elevations to the south of the site to further characterize and confirm groundwater flow at the site.

Response:

A. Hydrographs for the site monitoring wells were prepared and are attached as Figures GW-2A through GW-2F to evaluate for which monitoring events additional groundwater contour maps should be prepared. As illustrated on these hydrographs, groundwater elevations from 2006 generally lie between the historical maximum and minimum groundwater elevations and therefore represent an approximate midpoint of the natural water table fluctuations at the site. Additionally, the water level data sets from 2006 are relatively more complete than other data sets throughout the historical period of monitoring. This information was discussed during recent conference calls between Aerojet and DEQ, and both parties agreed to use the 2006 data to generate the requested contour figures. Given this, groundwater contour maps were created using quarterly (January, April, July, and October) water level data from 2006 and are attached as Figures GW-2G through GW-2K. Additionally, a very recent groundwater contour map was created using groundwater elevation data collected in October 2009 (Figure GW-2L). As illustrated on these groundwater contour maps, the hydraulic gradient is consistently to the northwest, which is consistent with the October 1989 groundwater elevation contour map (Figure 9 in Attachment I.H-1). This consistency indicates that groundwater flow direction in the vicinity of the TTF has not changed significantly with time.

   Aerojet will add language to the end of second paragraph under the heading <u>Shallow Groundwater Flow</u> in Section I.H.1.c.1, Groundwater Flow, Direction, and Rate, to include these additional figures in the Part B Permit Application. The paragraph currently states:

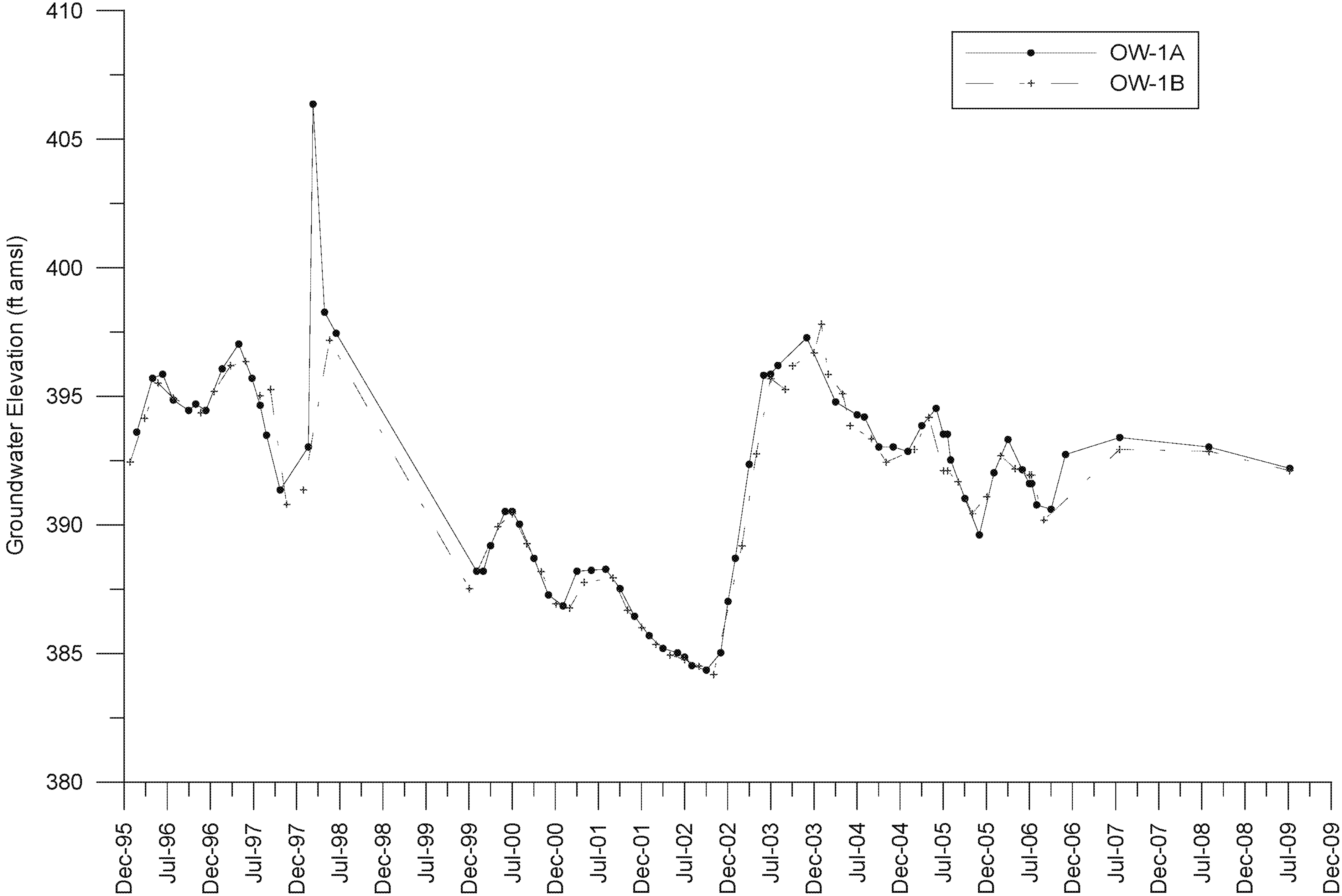
"Based on the water level gauging described above, the direction of shallow groundwater flow at the TTF area was determined to be to the northwest. Figure 9 of the Hydrogeological Investigation illustrates the groundwater contours and flow direction."

The following language will be added at the end of this paragraph:

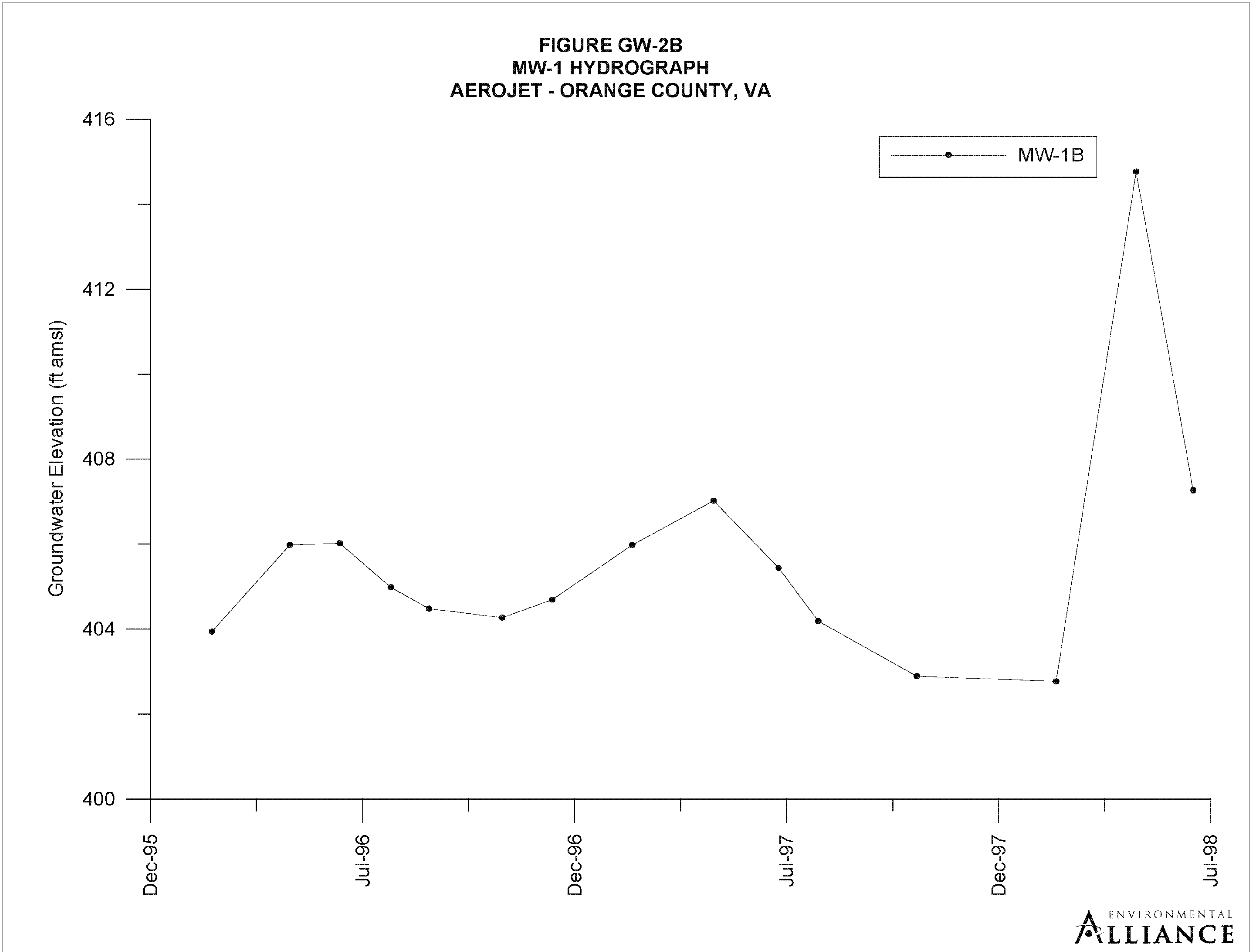
"At the request of DEQ, Aerojet has prepared additional groundwater contour maps using quarterly (January, April, July, and October) water level data from 2006. A very recent groundwater contour map was also created using groundwater elevation data collected in October 2009. These contour figures are included at the beginning of Attachment I.H-1 as Figures GW-2G through GW-2K (2006) and Figure GW-2L (October 2009) respectively. As illustrated on these groundwater contour maps, the hydraulic gradient is consistently to the northwest, which is consistent with the October 1989 groundwater elevation contour map, Figure 9 in the Hydrogeological Investigation. This consistency indicates that groundwater flow direction in the vicinity of the TTF has not changed significantly with time."

B. As described in the response to Comment #3.A above, the groundwater flow direction in the vicinity of the TTF has not changed significantly with time and generally flows to the northwest toward the unnamed tributary of Mountain Run. Aerojet will re-evaluate groundwater flow directions in light of the newly-created groundwater contour maps as well as other factors (e.g., topography, bedrock structure, and bedrock surface slope) and provide a response to DEQ within 60 days of this correspondence. To incorporate DEQ's thoughts on the new information prior to completion of our evaluation, Aerojet respectfully requests review by and a conference call with DEQ within 30 days of the submittal of this correspondence.

FIGURE GW-2A
OW-1 CLUSTER HYDROGRAPH
AEROJET - ORANGE COUNTY, VA



ENVIRONMENTAL ALLIANCE



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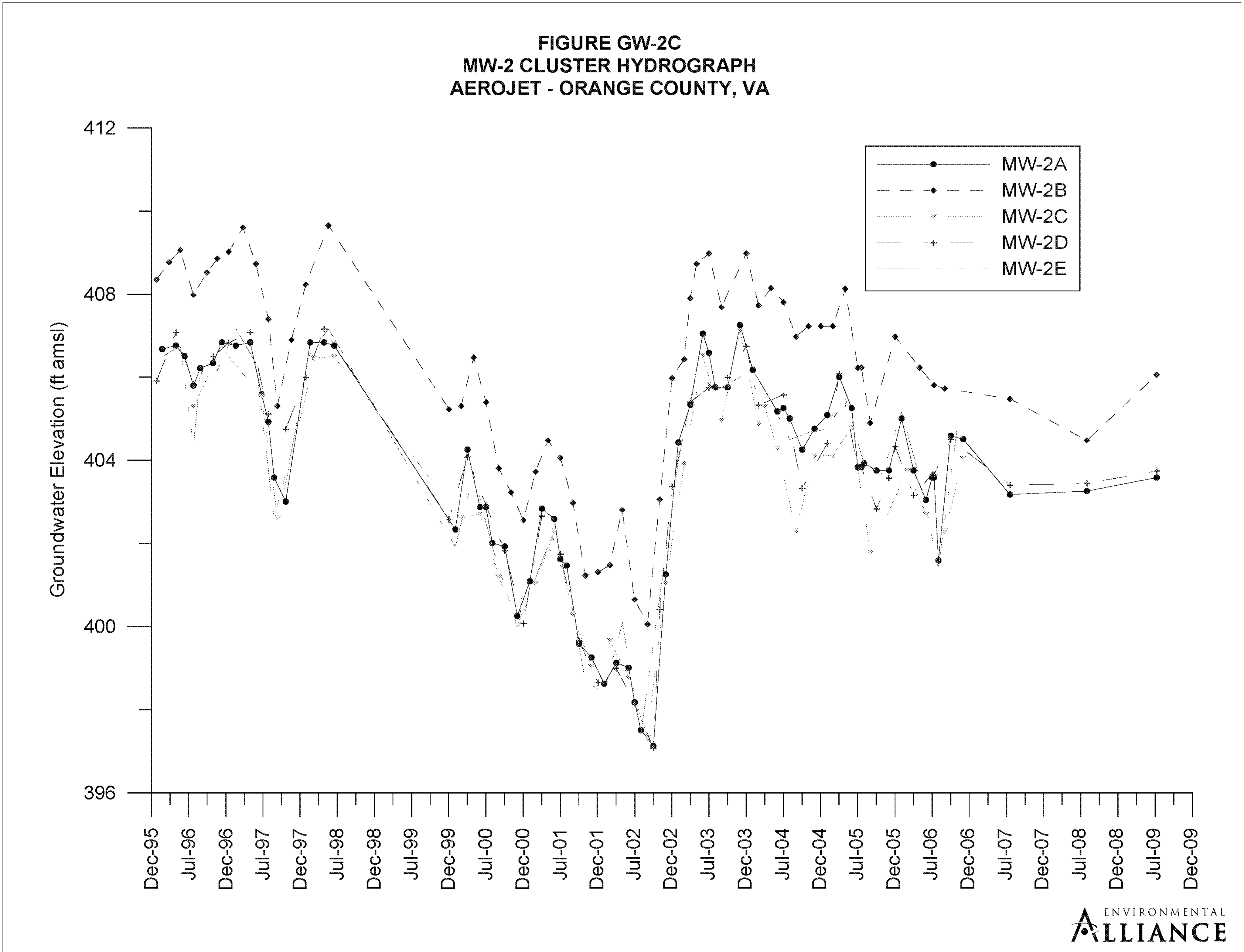


ED_001691B_00019876

FIGURE GW-2D
MW-3 CLUSTER HYDROGRAPH
AEROJET - ORANGE COUNTY, VA

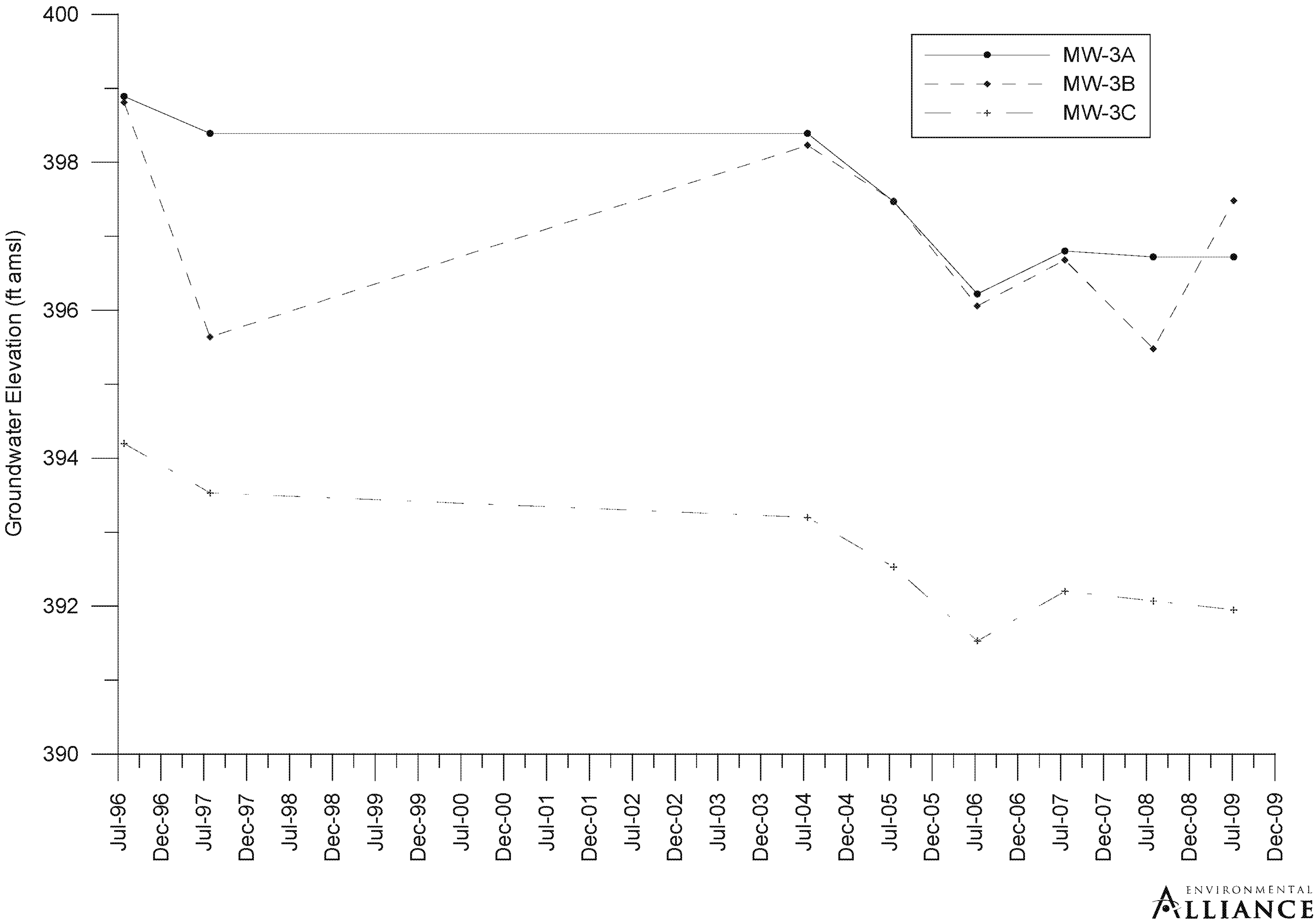
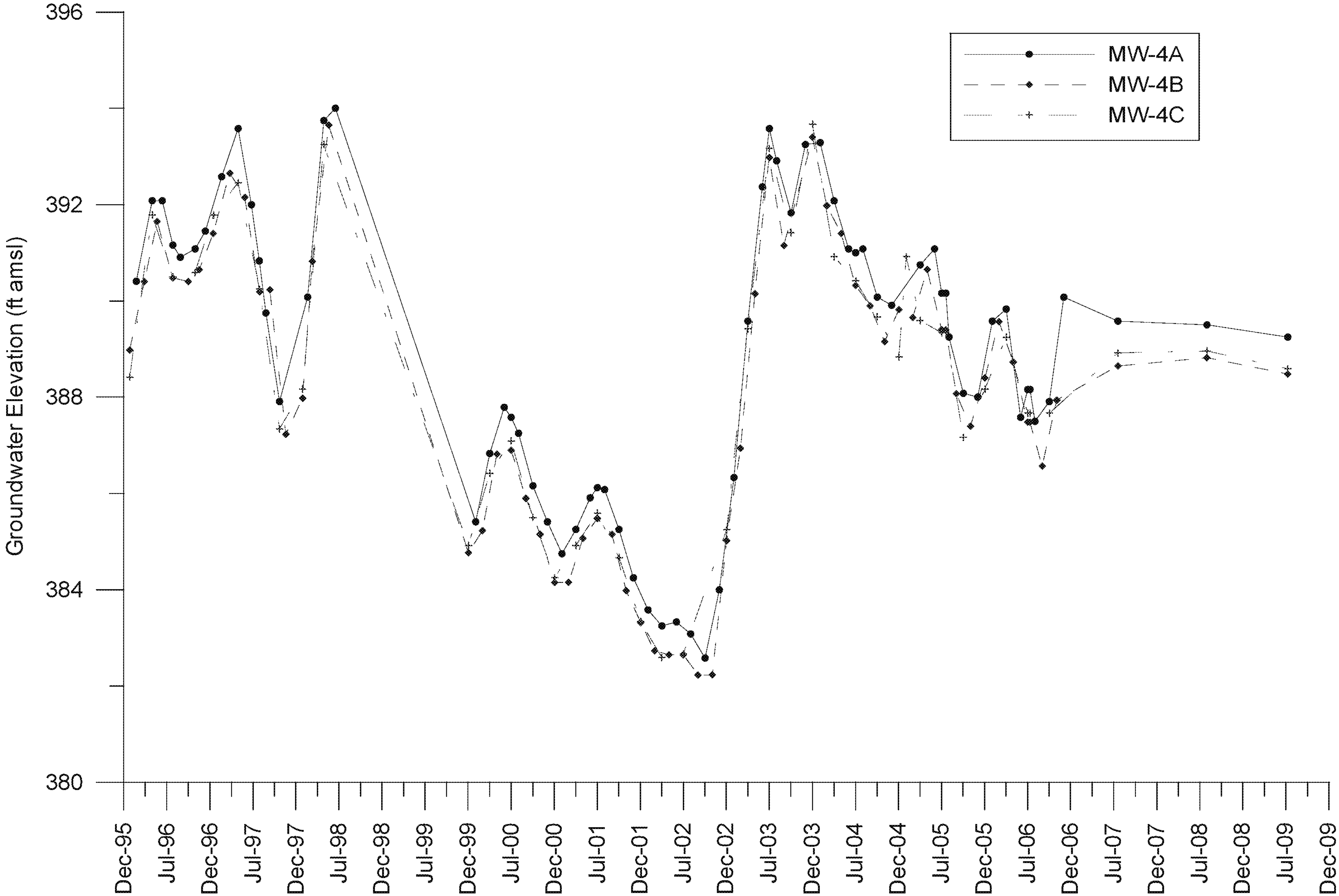
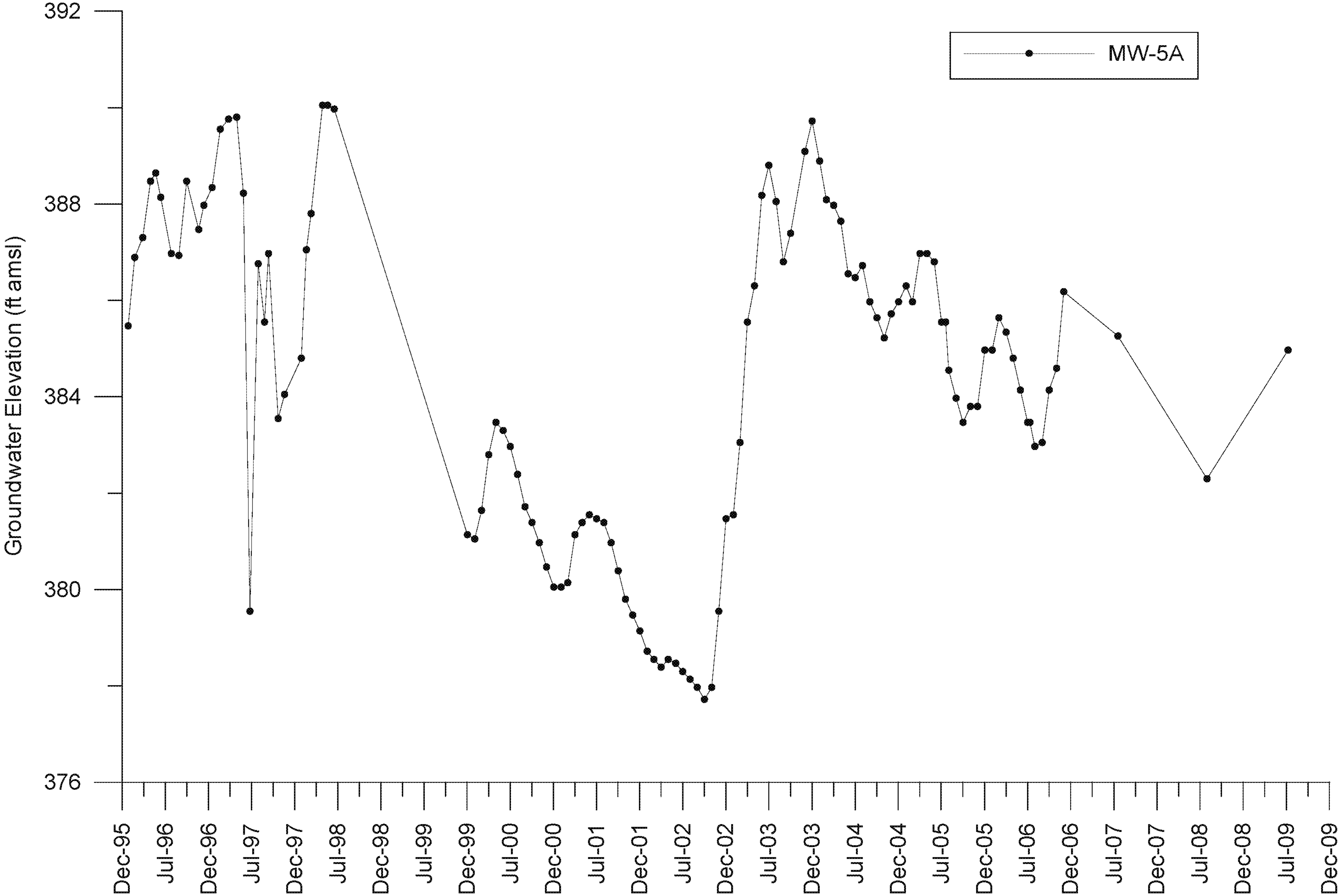


FIGURE GW-2E
MW-4 CLUSTER HYDROGRAPH
AEROJET - ORANGE COUNTY, VA



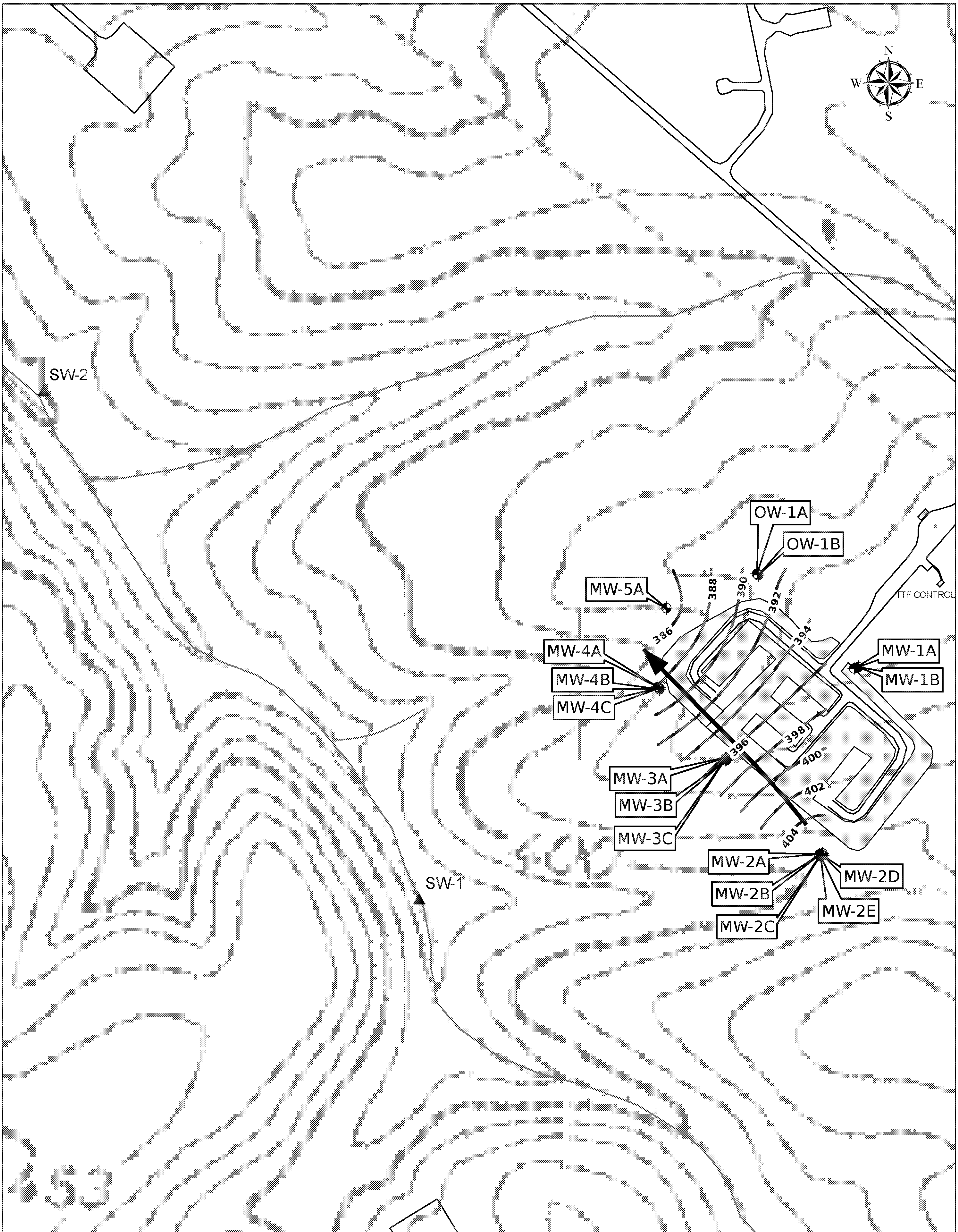
ENVIRONMENTAL ALLIANCE

FIGURE GW-2F
MW-5 HYDROGRAPH
AEROJET - ORANGE COUNTY, VA



ENVIRONMENTAL ALLIANCE

ED_001691B_00019876



Location ID	Groundwater Elevation (ft)
MW-2B	406.98
MW-2D	404.33
MW-4B	388.40
MW-4C	388.17
MW-5A	384.97
OW-1A	391.11

Legend

- Monitoring Well
- Surface Water Monitoring Locations
- Groundwater Elevation Contour (ft)
- Apparent Groundwater Flow Direction
- Property Line
- Stream
- Building
- TTF Berm

0 250 500 Feet

Source: 7.5 Minute USGS Topographic Map Unionville, VA, 1989

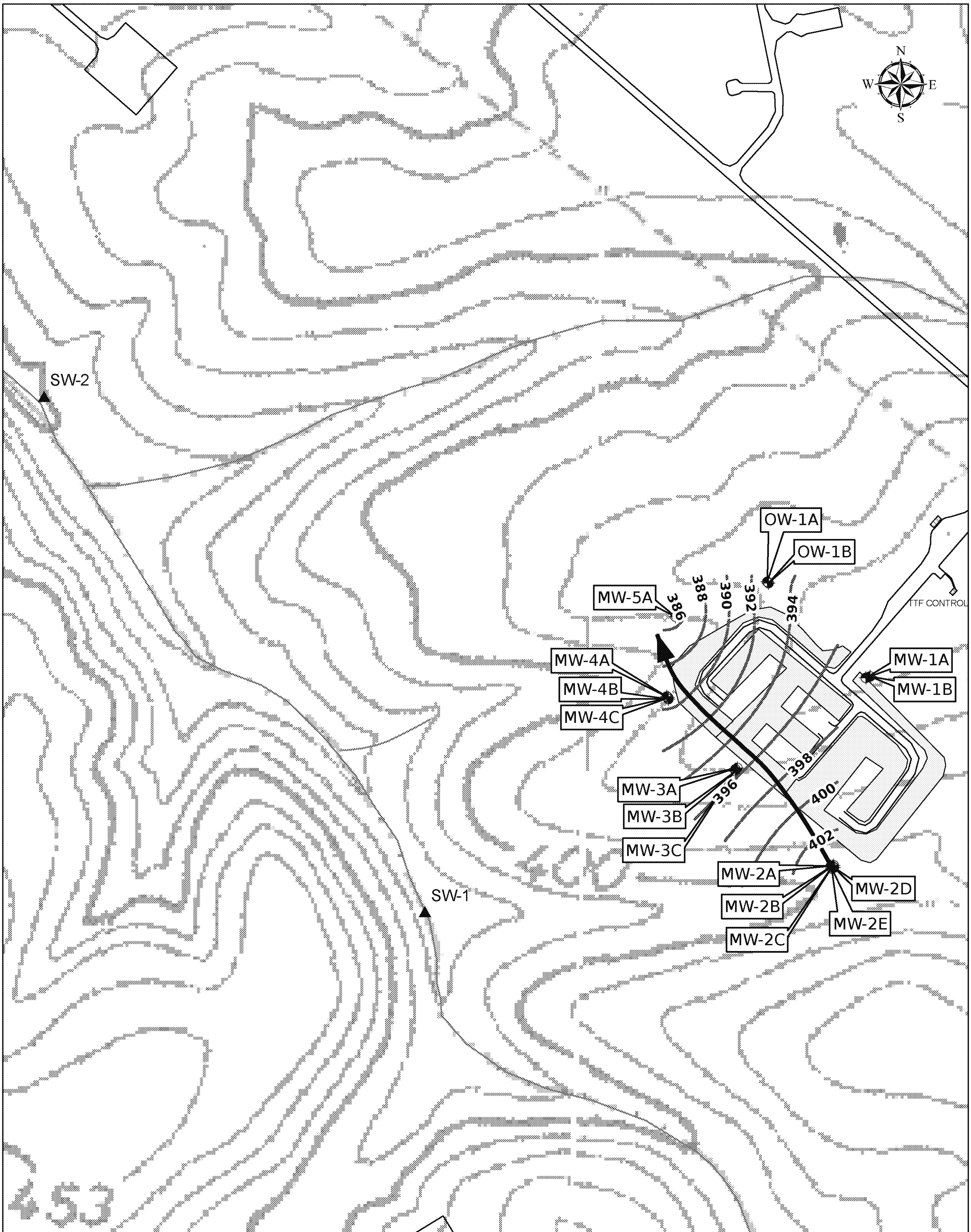
Environmental Alliance, Inc.
660 Yorklyn Road, Hockessin, DE 19707
Phone: (302) 234-4400 - Fax: (302)234-1535

Aerojet Facility
Orange County, Virginia

Groundwater Table Contour Map
January 2006

DESIGNED BY: JE	DRAWN BY: SKJ	UPDATED BY: -- --	FIGURE NO.:
APPROVED BY:	PROJECT NO.: 1743	DATE: 11/20/2009	GW-2G

Friday, January 22, 2010 2:07:15 PM • G:\EAI Projects\Non-PCG Projects\1743-Orange County\1743-Maps\Groundwater maps\1743-GW_Grad1-06_P.mxd



Location ID	Groundwater Elevation (ft)
MW-2A	403.76
MW-2D	403.16
MW-4A	389.83
MW-4C	389.25
MW-5A	385.34
OW-1A	393.32

Legend

- Monitoring Well
- Surface Water Monitoring Locations
- Groundwater Elevation Contour (ft)
- Apparent Groundwater Flow Direction
- Property Line
- Stream
- Building
- TTF Berm

0 250 500 Feet

Source: 7.5 Minute USGS Topographic Map Unionville, VA, 1989

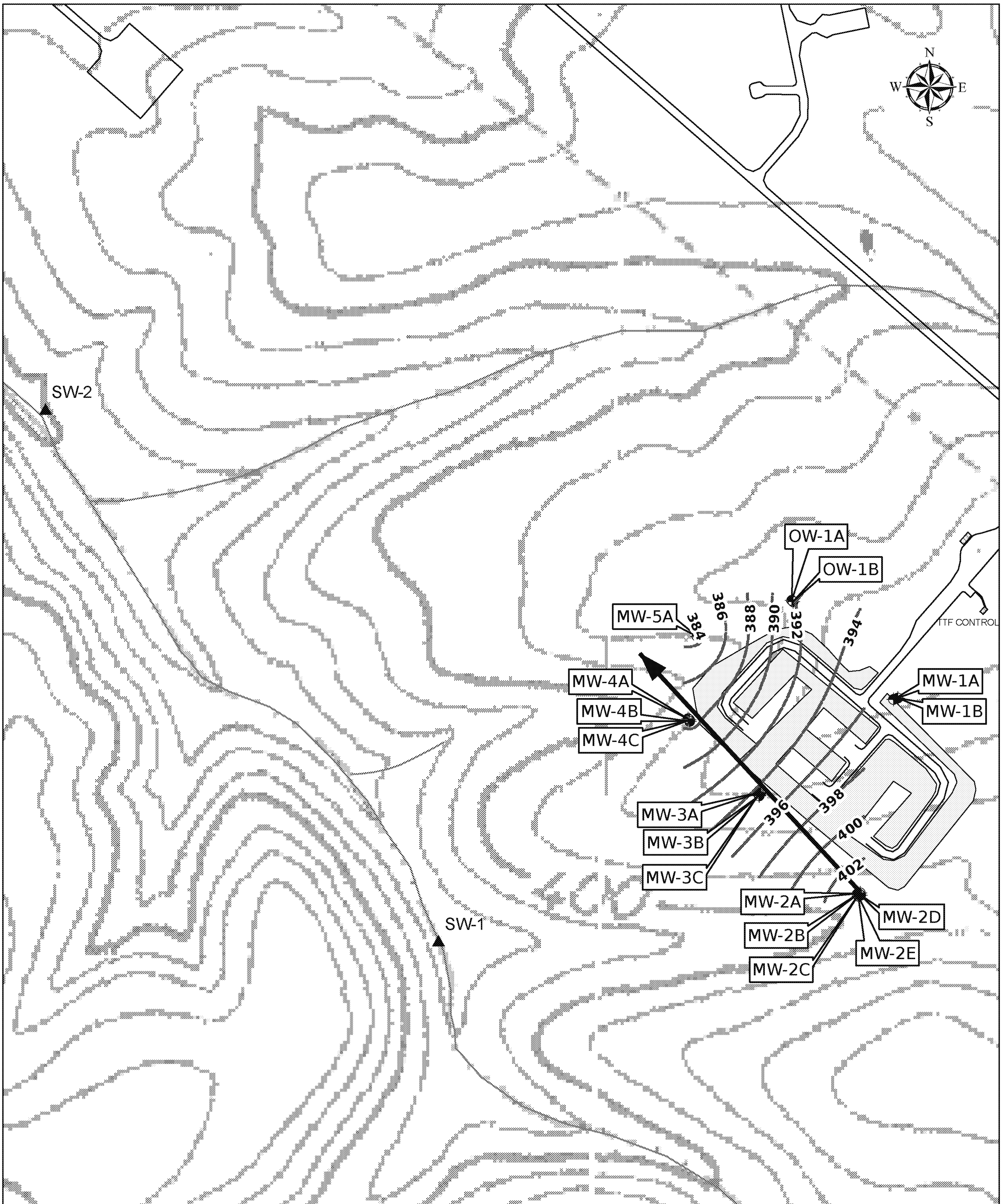
Environmental Alliance, Inc.
660 Yorklyn Road, Hockessin, DE 19707
Phone: (302) 234-4400 - Fax: (302)234-1535

Aerojet Facility
Orange County, Virginia

Groundwater Table Contour Map
April 2006

DESIGNED BY: JE	DRAWN BY: SKJ	UPDATED BY: --	FIGURE NO.: GW-2H
APPROVED BY:	PROJECT NO.: 1743	DATE: 11/20/2009	

Friday, November 20, 2009 11:43:13 AM • G:\EAI Projects\Non-PCG Projects\1743-Orange County\1743-Maps\Groundwater maps\1743-GW_Grad4-06_P.mxd



Location ID	Groundwater Elevation (ft)
MW-2A	403.59
MW-2D	403.66
MW-4A	388.16
MW-4B	387.48
MW-4C	387.67
MW-5A	383.47
OW-1A	391.61
OW-1B	391.94

Legend

Monitoring Well
Surface Water Monitoring Locations
Groundwater Elevation Contour (ft)
Apparent Groundwater Flow Direction
Property Line
Stream
Building
TTF Berm

0 250 500 Feet

Source: 7.5 Minute USGS Topographic Map Unionville, VA, 1989

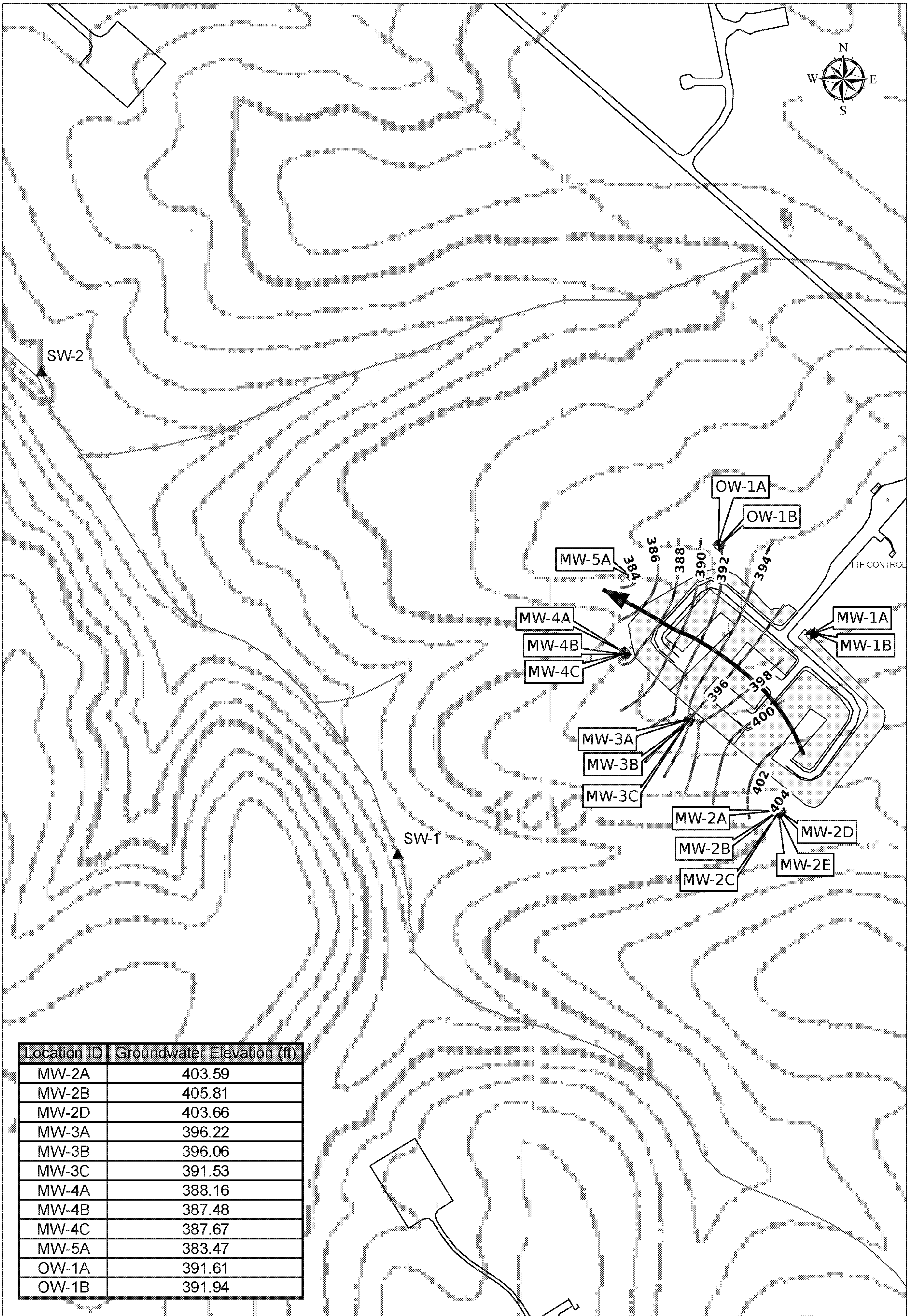
Environmental Alliance, Inc.
660 Yorklyn Road, Hockessin, DE 19707
Phone: (302) 234-4400 - Fax: (302)234-1535

Aerojet Facility
Orange County, Virginia

Groundwater Table Contour Map
July 1, 2006

DESIGNED BY:	DRAWN BY:	UPDATED BY:	FIGURE NO.:
JE	SKJ	-- --	GW-2I
APPROVED BY:	PROJECT NO.: 1743	DATE: 11/20/2009	

Friday, November 20, 2009 12:09:33 PM • G:\EAI Projects\Non-PCG Projects\1743-Orange County\1743-Maps\Groundwater maps\1743-GW_Grad7-06_P.mxd



Location ID	Groundwater Elevation (ft)
MW-2A	403.59
MW-2B	405.81
MW-2D	403.66
MW-3A	396.22
MW-3B	396.06
MW-3C	391.53
MW-4A	388.16
MW-4B	387.48
MW-4C	387.67
MW-5A	383.47
OW-1A	391.61
OW-1B	391.94

Legend

Monitoring Well
Surface Water Monitoring Locations
Groundwater Elevation Contour (ft)
Apparent Groundwater Flow Direction
Property Line
Stream
Building
TTF Berm

0 250 500 Feet

Source: 7.5 Minute USGS Topographic Map Unionville, VA, 1989

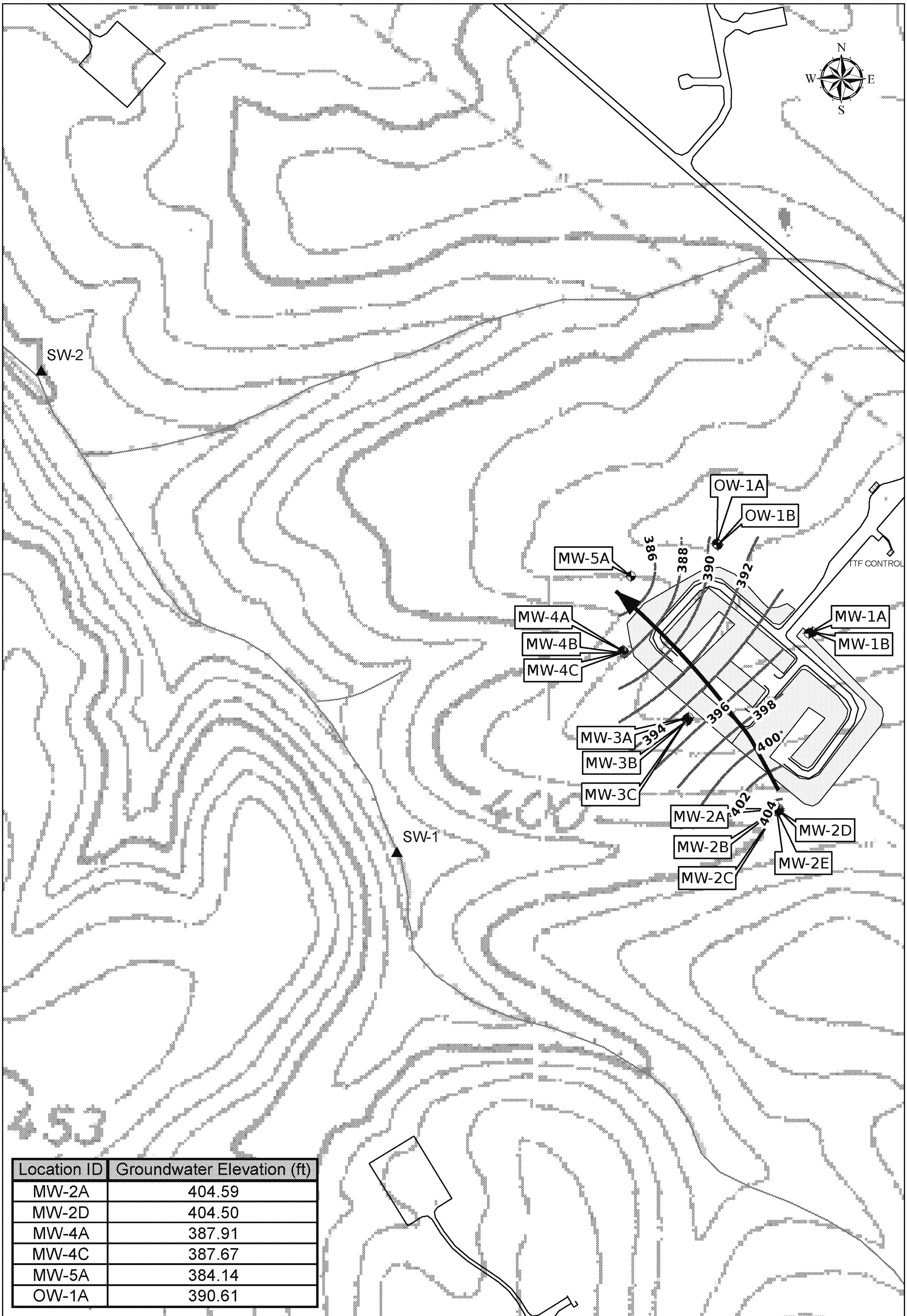
Environmental Alliance, Inc.
660 Yorklyn Road, Hockessin, DE 19707
Phone: (302) 234-4400 - Fax: (302)234-1535

Aerojet Facility
Orange County, Virginia

Groundwater Table Contour Map
July 11, 2006

DESIGNED BY: JE	DRAWN BY: SKJ	UPDATED BY: -- --	FIGURE NO.: GW-2J
APPROVED BY:	PROJECT NO.: 1743	DATE: 11/20/2009	

Tuesday, October 27, 2009 9:29:52 AM • G:\EAI Projects\Non-PCG Projects\1743-Orange County\1743-Maps\Groundwater maps\1743-GW_Grad7-06_P.mxd



Location ID	Groundwater Elevation (ft)
MW-2A	404.59
MW-2D	404.50
MW-4A	387.91
MW-4C	387.67
MW-5A	384.14
OW-1A	390.61

Legend

- Monitoring Well
- Surface Water Monitoring Locations
- Groundwater Elevation Contour (ft)
- Apparent Groundwater Flow Direction
- Property Line
- Stream
- Building
- TTF Berm

0 250 500 Feet

Source: 7.5 Minute USGS Topographic Map Unionville, VA, 1989

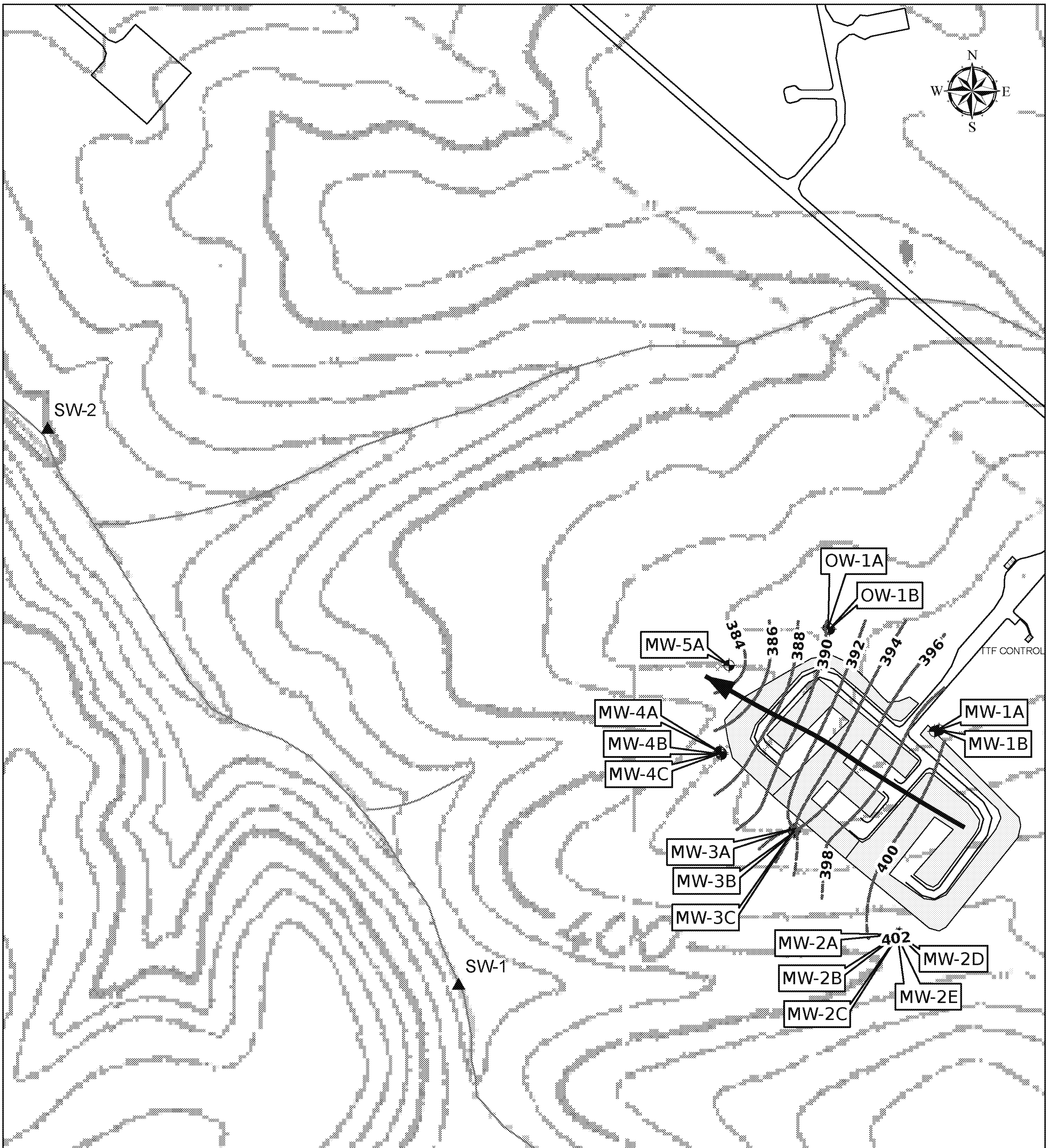
Environmental Alliance, Inc.
660 Yorklyn Road, Hockessin, DE 19707
Phone: (302) 234-4400 - Fax: (302)234-1535

Aerojet Facility
Orange County, Virginia

Groundwater Table Contour Map
October 2006

DESIGNED BY: JE	DRAWN BY: SKJ	UPDATED BY: -- --	FIGURE NO.: GW-2K
APPROVED BY:	PROJECT NO.: 1743	DATE: 11/20/2009	

Friday, November 20, 2009 12:38:46 PM • G:\EAI Projects\Non-PCG Projects\1743-Orange County\1743-Maps\Groundwater maps\1743-GW_Grad10-06_P.mxd



Location ID	Groundwater Elevation (ft)
MW-1B	399.78
MW-2A	401.42
MW-2B	403.92
MW-2D	401.47
MW-2E	401.36
MW-3A	395.26
MW-3B	395.13
MW-3D	390.64
MW-4A	387.27
MW-4B	386.58
MW-4C	386.77
MW-5A	382.72
OW-1A	390.24
OW-1B	390.07

Legend

- Monitoring Well
- Surface Water Monitoring Locations
- Groundwater Elevation Contour (ft)
- Apparent Groundwater Flow Direction
- Property Line
- Stream
- Building
- TTF Berm

0 250 500 Feet

Source: 7.5 Minute USGS Topographic Map Unionville, VA, 1989

Environmental Alliance, Inc.
660 Yorklyn Road, Hockessin, DE 19707
Phone: (302) 234-4400 - Fax: (302)234-1535

Aerojet Facility
Orange County, Virginia

Groundwater Table Contour Map
October 2009

DESIGNED BY: JE	DRAWN BY: SKJ	UPDATED BY: -- --	FIGURE NO.:
APPROVED BY:	PROJECT NO.: 1743	DATE: 11/20/2009	GW-2L

Friday, November 20, 2009 1:22:54 PM • G:\EAI Projects\Non-PCG Projects\1743-Orange County\1743-Maps\Groundwater maps\1743-GW_Grad10-09_P.mxd

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTE DIVISION
OFFICE OF REMEDIATION PROGRAMS

Memorandum

TO: Russ McAvoy
Environmental Engineer Sr.

THROUGH: Jutta Schneider *Jutta Schneider*
Hazardous Waste/Groundwater Manager

FROM: Fuxing Zhou *Fuxing Zhou*
Environmental Specialist II

DATE: February 17, 2010

SUBJ: RESPONSES TO DEQ'S COMMENTS ON THE RCRA PART A AND B APPLICATIONS - AEROJET ORANGE, DATED JANUARY 26, 2010
Thermal Treatment Units (Open Burning) for Waste Propellants
Aerojet General Corporation, Orange County Facility, Culpeper, VA
EPA ID No. VAD981112618

I have reviewed the responses to the DEQ groundwater comments on the RCRA Part A and B Applications for the Aerojet Orange facility, dated January 26, 2010. The facility responded to comments provided by the groundwater staff in a memo dated February 8, 2008. My replies to these responses are provided below.

1. POST-CLOSURE PLAN (Section I.G)

Since the Department reached agreement with the facility during conference calls in October and December 2009, a Post-closure Plan will not be required at this moment. The response is satisfactory.

2. ADDITIONAL GEOLOGICAL CROSS SECTION (I.H.1.b "Geology and Soil")

The response is satisfactory.

3. GROUNDWATER FLOW, DIRECTION, AND RATE (Section I.H.1.c)

A. The response is satisfactory.

B. One purpose of characterization and confirmation of groundwater flow direction is to establish an adequate background well. Based on the figures and maps provided by the facility in this response, the well cluster MW-2 can be conditionally used as a background well. After the Department reviews all available historical data and/or if future data indicate that the well cluster MW-2 has been impacted (i.e. one or more contaminants are detected in one or more wells), the facility should be required to install a new well as the background well. The location for this new background well must be approved by the Department. Please note that the facility has requested a response to this item within 30 days of their submittal, or by February 26, 2010.

4. <u>GROUNDWATER QUALITY DATA (Section I.H.2)</u>

A. The response is satisfactory.

B. The response is satisfactory. In the future the facility must conduct and submit data evaluation and validation (including qualifier, corrective, and usability) results and case narratives to explain the usability of the analytical results.

C. The response is satisfactory.

D. The Department has agreed that the facility will not recalculate, but the Department will statistically calculate the background values using the historical data which were collected under the EPA RD&D permit. If the Department's review and statistical calculation suggest a possible exceedance, the facility should be required to monitor the background and POC wells quarterly for one (1) year to confirm or refute the exceedance. If the exceedance is confirmed, the groundwater monitoring will need to be conducted under a compliance monitoring program.

5. <u>GROUNDWATER MONITORING SYSTEM (Section I.H.3)</u>

A. As 3.B. above indicates, at this moment the Department tentatively accepts the MW-2 well cluster as background wells in the proposed monitoring system. If the groundwater monitoring data show that MW-2 has been impacted, a new background well should be installed. The location for this new background well must be approved by the Department. Please note that the facility has requested a response to this item within 30 days of their submittal, or by February 26, 2010.

B. The response is satisfactory.

6. <u>GROUNDWATER MONITORING PROGRAM (I.H.4)</u>

A. Groundwater will initially be monitored under the detection monitoring program when the permit is issued. As discussed above, when a statistically significant exceedance is found, the groundwater will need to be monitored under a compliance monitoring program. The compliance monitoring program module will be included in the coming permit.

B. In addition to MW-4, MW-5 and OW-1, the POC wells will need to include the MW-3 wells in order

RESPONSES TO DEQ'S 2ND ROUND OF GROUNDWATER COMMENTS (FROM STATISTICAL AND GENERAL REVIEWS)

The following presents Aerojet's responses to the 2nd round of groundwater comments by the Virginia Department of Environmental Quality (the Department or DEQ) regarding the Part B Application for the Aerojet General Corporation (Aerojet), Orange County Facility, Culpeper, VA (the facility). These responses address the Department's comments dated February 17, 2010 resulting from their review of Aerojet's responses (dated January 29, 2010) to DEQ's original groundwater comments. Further, Aerojet's evaluation of groundwater flow, direction, and rate in light of the recently-created groundwater contour maps as well as other factors (e.g., topography, bedrock structure, and bedrock surface slope), including the groundwater monitoring system and monitoring program, is presented within the context of responses to DEQ's 2nd Round Groundwater Comments #3.B, #5.A, #6.A, #6.B, and #6.C. (Note that the groundwater evaluation was proposed in response to DEQ's 1st Round Groundwater Comments #3.B, 5.A, 5.B, and 6.C.) The groundwater evaluation was conducted using data from the Hydrogeological Investigation (Schnabel Engineering Associates, 1989) and from routine monitoring at the facility, including the additional groundwater contour maps for 2006 and 2009 data presented in the 1st responses to groundwater comments dated January 29, 2010.

For clarity, DEQ's 2nd round comments of February 17, 2010, are in italics. Aerojet's responses are in normal text.

Comment:
1. POST-CLOSURE PLAN (Section I.G)

Since the Department reached agreement with the facility during conference calls in October and December 2009, a Post-closure Plan will not be required at this moment. The response is satisfactory.

Response: No further response needed.

Comment:
2. ADDITIONAL GEOLOGICAL CROSS SECTION (I.H.1.b "Geology and Soil")

The response is satisfactory.

Response: No further response needed.

Comment:
3. GROUNDWATER FLOW, DIRECTION, AND RATE (Section I.H.1.c)

A. The response is satisfactory.

Response: No further response needed.

B. One purpose of characterization and confirmation of groundwater flow direction is to establish an adequate background well. Based on the figures and maps provided by the facility in this response, the well cluster MW-2 can be conditionally used as a background well. After the Department reviews all available historical data and/or if future data indicate that the well cluster MW-2 has been impacted (i.e. one or more contaminants are detected in one or more wells), the facility should be required to install a new well as the background well. The location for this new background well must be approved by the Department. Please note that the facility has requested a response to this item within 30 days of their submittal, or by February 26, 2010.

Response: Based on our evaluation of groundwater flow, the MW-2 well cluster is consistently located at the southern corner of the up-gradient (southeastern) end of the TTF. Therefore, Aerojet concurs with the Department on conditional use of MW-2 as a background well and understands that a new background well may be needed in the future should historical or future data indicate that the well cluster MW-2 has been impacted. Aerojet will revise the language in the first paragraph of Section I.H.3.b. The paragraph currently states:

"One background groundwater monitoring well cluster (MWs-2A, 2B, 2C, 2D, 2E) was installed for background water quality monitoring of the thermal treatment facility. The well cluster is located approximately 125 feet up-gradient with respect to the southeastern end of the TTF. The wells were installed so that their screened portions were placed within the saturated unconsolidated sediments estimated to be approximately 88 feet deep. The location of the background groundwater monitoring well cluster is illustrated in Figure I.H-1."

The paragraph will be revised to read as follows:

"One background groundwater monitoring well cluster (MWs-2A, 2B, 2C, 2D, 2E) was installed for background water quality monitoring of the thermal treatment facility. The wells were installed so that their screened portions were placed within the saturated unconsolidated sediments. The well cluster is located on the southern corner of the up-gradient (southeastern) end of the TTF. The location of the background groundwater monitoring well cluster is illustrated in Figure I.H-1. MW-2 will be conditionally used as the background monitoring well. Should historical or future data indicate that well cluster MW-2 has been impacted (i.e., one or more contaminants are detected at statistically significant concentrations that can be demonstrated to be the result of TTF activities rather than the result of natural processes in one or more wells), the facility will install a new well as the background well. The proposed location of the new well will be provided to the Department for their approval prior to installation."

ATTACHMENT K

PROOF OF FINANCIAL ASSURANCE

ENVIRONMENTAL ALLIANCE

AEROJET

P O Box 13222
Sacramento CA 95813-6000

Tel: 916-351-8524
Fax: 916-355-3603
william.hvidsten@aerojet.com

William E. Hvidsten
Senior Counsel
Environmental Law

February 13, 2013

VIA FEDERAL EXPRESS

Suzanne D. Taylor
Office of Financial Assurance
Division of Land Protection & Revitalization
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: Aerojet-General Corporation Financial Assurance/VAD 981112618
7499 Pine Stake Road, Culpepper, VA 22701

Dear Suzanne:

Please find enclosed the Surety Rider to Aerojet-General Corporation's Surety Bond No. K08595173 which incorporates the inflation factor for 2012 of 1.024.

Please let me know if you have any questions.

Sincerely,

William E. Hvidsten

cc: Tim Holden
Nabara Kazimi

SURETY RIDER

To be attached to and form a part of

Bond No. K08595173
Cross Ref:

Type of Bond: Closure/Post Closure

dated effective November 30, 2011
(MONTH-DAY-YEAR)

executed by Aerojet-General Corporation , as Principal,
(PRINCIPAL)

and by Westchester Fire Insurance Company , as Surety,

in favor of Virginia Department of Enviornmental Quality
(OBLIGEE)

in consideration of the mutual agreements herein contained the Principal and the Surety hereby consent to changing the penal sum of the bond

FROM: $151,010.00

TO: $154,634.00

Nothing herein contained shall vary, alter or extend any provision or condition of this bond except as herein expressly stated.

This rider is effective February 6, 2013
(MONTH-DAY-YEAR)

Signed and Sealed February 6, 2013
(MONTH-DAY-YEAR)

Aerojet-General Corporation
(PRINCIPAL)

By: Kathleen E Redd
(PRINCIPAL)

Westchester Fire Insurance Company
(SURETY)

By: Alice V Halter
(ATTORNEY-IN-FACT)

LMS-10443 08/08

Power of Attorney

WESTCHESTER FIRE INSURANCE COMPANY

Know all men by these presents: That **WESTCHESTER FIRE INSURANCE COMPANY**, a corporation of the Commonwealth of Pennsylvania pursuant to the following Resolution, adopted by the Board of Directors of the said Company on December 11, 2006, to wit:

"RESOLVED, that the following authorizations relate to the execution, for and on behalf of the Company, of bonds, undertakings, recognizances, contracts and other written commitments of the Company entered into the ordinary course of business (each a "Written Commitment"):

(1) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise.

(2) Each duly appointed attorney-in-fact of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise, to the extent that such action is authorized by the grant of powers provided for in such persons written appointment as such attorney-in-fact.

(3) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to appoint in writing any person the attorney-in-fact of the Company with full power and authority to execute, for and on behalf of the Company, under the seal of the Company or otherwise, such Written Commitments of the Company as may be specified in such written appointment, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.

(4) Each of the Chairman, the President and Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to delegate in writing any other officer of the Company the authority to execute, for and on behalf of the Company, under the Company's seal or otherwise, such Written Commitments of the Company as are specified in such written delegation, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.

(5) The signature of any officer or other person executing any Written Commitment or appointment or delegation pursuant to this Resolution, and the seal of the Company, may be affixed by facsimile on such Written Commitment or written appointment or delegation.

FURTHER RESOLVED, that the foregoing Resolution shall not be deemed to be an exclusive statement of the powers and authority of officers, employees and other persons to act for and on behalf of the Company, and such Resolution shall not limit or otherwise affect the exercise of any such power or authority otherwise validly granted or vested.

Does hereby nominate, constitute and appoint Alice V Halter, Cathy L Woodruff, all of the City of CLEVELAND, Ohio, each individually if there be more than one named, its true and lawful attorney-in-fact, to make, execute, seal and deliver on its behalf, and as its act and deed any and all bonds, undertakings, recognizances, contracts and other writings in the nature thereof in penalties not exceeding Ten million dollars & zero cents ($10,000,000.00) and the execution of such writings in pursuance of these presents shall be as binding upon said Company, as fully and amply as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its principal office.

IN WITNESS WHEREOF, the said Stephen M. Haney, Vice-President, has hereunto subscribed his name and affixed the Corporate seal of the said **WESTCHESTER FIRE INSURANCE COMPANY** this 2 day of February 2011.

WESTCHESTER FIRE INSURANCE COMPANY

WESTCHESTER FIRE INSURANCE CO.

Stephen M. Haney

Stephen M. Haney , Vice President

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF PHILADELPHIA ss

On this 2 day of February, AD. 2011 before me, a Notary Public of the Commonwealth of Pennsylvania in and for the County of Philadelphia came Stephen M. Haney ,Vice-President of the **WESTCHESTER FIRE INSURANCE COMPANY** to me personally known to be the individual and officer who executed the preceding instrument, and he acknowledged that he executed the same, and that the seal affixed to the preceding instrument is the corporate seal of said Company; that the said corporate seal and his signature were duly affixed by the authority and direction of the said corporation, and that Resolution, adopted by the Board of Directors of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at the City of Philadelphia the day and year first above written.

KAREN E. BRANDT

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
KAREN E. BRANDT, Notary Public
City of Philadelphia, Phila. County
My Commission Expires September 26, 2014

Karen E Brandt

Notary Public

I, the undersigned Assistant Secretary of the **WESTCHESTER FIRE INSURANCE COMPANY**, do hereby certify that the original POWER OF ATTORNEY, of which the foregoing is a substantially true and correct copy, is in full force and effect.

In witness whereof, I have hereunto subscribed my name as Assistant Secretary, and affixed the corporate seal of the Corporation, this 6th day of February, 2013

WESTCHESTER FIRE INSURANCE CO.

William L. Kelly

William L. Kelly, Assistant Secretary

THIS POWER OF ATTORNEY MAY NOT BE USED TO EXECUTE ANY BOND WITH AN INCEPTION DATE AFTER February 02, 2013.

THE BACK OF THIS DOCUMENT LISTS VARIOUS SECURITY FEATURES THAT WILL PROTECT AGAINST COPY COUNTERFEIT AND ALTERATION.

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of Sacramento

On February 12, 2013 before me, Christine M. Conover, Notary Public,
Date — Here Insert Name and Title of the Officer

personally appeared Kathleen E. Redd
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(~~s~~) whose name(~~s~~) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~they~~ executed the same in ~~his~~/her/~~their~~ authorized capacity(~~ies~~), and that by ~~his~~/her/~~their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

CHRISTINE M. CONOVER
Commission # 1931591
Notary Public - California
Sacramento County
My Comm. Expires May 4, 2015

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Place Notary Seal and/or Stamp Above

Signature [signature]
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Surety Rider

Document Date: February 6, 2013 Number of Pages: 2

Signer(s) Other Than Named Above: none

Capacity(ies) Claimed by Signer(s)

Signer's Name: Kathleen E. Redd	Signer's Name: [signature] Kathleen E Redd
☒ Corporate Officer — Title(s): VP, CFO	☐ Corporate Officer — Title(s):
☐ Individual	☐ Individual
☐ Partner — ☐ Limited ☐ General	☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact	☐ Attorney in Fact
☐ Trustee	☐ Trustee
☐ Guardian or Conservator	☐ Guardian or Conservator
☐ Other:	☐ Other:
Signer Is Representing: Aerojet · General Corporation	Signer Is Representing:
RIGHT THUMBPRINT OF SIGNER — Top of thumb here: PRINT REDACTED	RIGHT THUMBPRINT OF SIGNER — Top of thumb here

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Pursuant to §2.2-3705.1 and §2.2-3801, certain personal information is not subject to FOIA. The following information was removed from these records:

- ___ **Social Security Number(s)**
- ___ **Financial information** such as: account numbers or routing numbers for any credit card, debit or checks
- ✓ **Personal identification numbers** such as: driver's license, student numbers, or agency-issued numbers
- ___ **Tax return information**
- ___ **Other personal information** such as: education, medical history, ancestry, religion, political ideology, criminal or employment record
- ___ **E-mail address** for an individual who requested that it not be released

Pursuant to (Circle one): § 62.1-44.21 (Water), §§ 10.1-1314 and 1314.1 (Air), and §§ 10.1-1314 and 1314.1 (Pollution Prevention) of the Virginia Code, certain confidential business information is not subject to disclosure requirements. The following information was removed from these records:

- ___ **Secret formulae, secret processes, or secret methods.**

Pursuant to 2.2-3705.1 *et seq.* of the Virginia Code, *records containing information on the site specific location of rare, threatened, endangered or otherwise imperiled plant and animal species, natural communities, caves, and significant historic and archaeological sites* are not subject to the Freedom of Information Act (FOIA).

The following information was removed from these records:

- ___ **Site specific location of rare, threatened, or otherwise imperiled plant and animal species, natural communities, and/or caves**
- ___ **Site specific location of significant historic and/or archaeological sites**
- ___ **Other**______________________________

Please feel free to contact the FOIA Coordinator for the DEQ [*insert name of region or program office (e.g.* Northern Regional Office*)]* if you have any questions or wish to discuss your request in further detail.

From: (916) 355-5427
CHRIS CONOVER
AEROJET
FOLSOM BLVD/AEROJET ROAD

RANCHO CORDOVA, CA 95670

Origin ID: MHRA

FedEx Express

E

J13101212190326

Ship Date: 13FEB13
ActWgt: 1.0 LB
CAD: 3462790/INET3370

Delivery Address Bar Code

SHIP TO: (916) 351-8524 BILL SENDER

Suzanne D. Taylor
Virginia Dept of Environ Quality
Office of Financial Assurance
629 East Main Street
RICHMOND, VA 23219

Ref # WEH-SuretyRider
Invoice #
PO #
Dept #

THU - 14 FEB A1
PRIORITY OVERNIGHT

TRK# 7947 4289 1715
0201

XH GVEA

23219
VA-US
RIC

518G1/DF24/93AB

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/templates/components/dotcom_label_contents/WarningsOriginalLabel/en/Folding_warning.html loading...
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ATTACHMENT L

PROOF OF LIABILITY COVERAGE

ENVIRONMENTAL ALLIANCE

Elham A. Tallackson
Advisory Representative

Marsh USA Inc.
540 West Madison
Chicago, IL 60661
+1 312 627 6762
elham.tallackson@marsh.com
www.marsh.com

MARSH

Leslie Beckwith
Virginia Department of Environmental Quality
629 E. Main Street
Richmond, VA 23219

February 13, 2013

Subject:	**Premises Environmental Liability Insurance Policy and Hazardous Waste Certificate for Aerojet General**
Insurer:	**Great American Environmental – Great American E&S Insurance**
Policy Number:	**PEL 2111288 03**
Policy Period:	**February 28, 2013 to February 28, 2014**

Dear Leslie:

Attached please find an original Hazardous Waste Facility Certificate of Liability Insurance for Aerojet-General Corporation, a GenCorp Company, as well as a copy of their Pollution Insurance Policy issued by Great American E&S Insurance Company. Coverage applies to the Aerojet facility in Rhoadesville, EPA ID# VAD981112618.

Please let me know if you have any questions or need anything further.

Sincerely,

Elham A. Tallackson
Marsh Environmental Practice

CC: Bill Marlow, GenCorp
Chris Conley, GenCorp

Attachments

GREAT AMERICAN.
INSURANCE GROUP

Hazardous Waste Facility Certificate of Liability Insurance

1. Great American E&S Insurance Company, the "Insurer", of 301 E. 4th Street, Cincinnati, Ohio 45202, hereby certifies that it has issued liability insurance covering bodily injury and property damage to Aerojet General Corporation, A GenCorp Company, the "insured", of PO Box 13222, Sacramento, CA 95853 in connection with the Insured's obligation to demonstrate financial responsibility under 40 CFR 264.147 or 265.147.

   The coverage applies at EPA ID #VAD981112618, Aerojet General Corporation, A GenCorp Company, Open Burn/Open Demolition Unit, Rhoadesville, VA for sudden and non-sudden accidental occurrences. The limits of liability are $4,000,000 each occurrence and $8,000,000 annual aggregate, exclusive of legal defense costs. The coverage is provided under policy number PEL 2111288 03, issued on 2/28/2013. The effective date of said policy is 2/28/2013.

2. The Insurer further certifies the following with respect to the insurance described in Paragraph 1:

   (a) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy.

   (b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in 40 CFR 264.147(f) or 265.147(f).

   (c) Whenever requested by a Director of the Virginia Department of Environmental Quality, the Insurer agrees to furnish to the Director a signed duplicate original of the policy and all endorsements.

   (d) Cancellation of the insurance, whether by the Insurer, the Insured, a parent corporation providing insurance coverage for its subsidiary, or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility, will be effective only upon written notice and only after the expiration of sixty (60) days after a copy of such written notice is received by the Director of the Virginia Department of Environmental Quality in which the facility(ies) is(are) located.

   (e) Any other termination of the insurance will be effective only upon written notice and only after the expiration of thirty (30) days after a copy of such written notice is received by the Director of the Virginia Department of Environmental Quality in which the facility(ies) is (are) located.

I hereby certify that the wording of this instrument is identical to the wording specified in 40 CFR 264.151(j) as such regulation was constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

[Signature of authorized representative of Insurer]

Date: Feb. 6, 2013

Doug Stepenosky
Senior Vice President, Authorized Representative of Great American E&S Insurance Company

c/o Great American Insurance Company
Environmental Division
401 Plymouth Road
Suite 100
Plymouth Meeting, PA 19462

VA-HAZWASTE (2/11)